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IN THIS ISSUE

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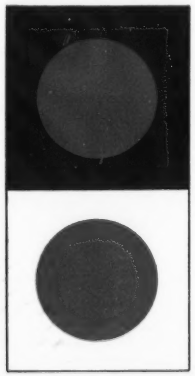
COLOR . . . plays tricks

in selecting anteriors for your next full or partial denture... consider the influence of environment on color



* * * * * * the size and color of the red discs within the black and white squares are identical although they *appear* to differ in both size *and* color . . . this is an optical illusion created by environment.

Tooth colors are subject to these same influences of light and environment—making the Dual-Dial Color System specially interesting and helpful in the quest for "living" esthetics.

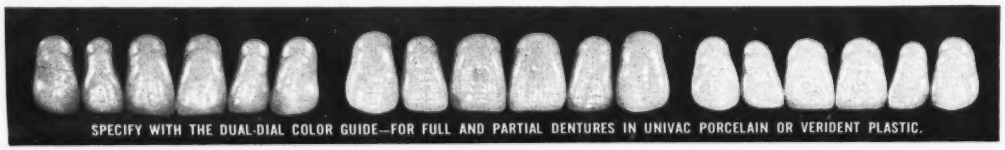
In full and partial denture prosthetics, too, color can play tricks. It is therefore not sufficient merely to match tooth colors . . . it is *even more* essential to select tooth colors having *ability-to-blend* . . . and thus to "come alive" in the oral environment. This is the phenomenal color characteristic that distinguishes Univac Porcelain and Verident Plastic above all other anteriors—assuring a *natural beauty*—so gratifying to the patient.

Univac and Verident tooth materials and their pigmentation were developed with special optical properties. Refraction and absorption of light approximate those of living teeth. Univac Porcelain and Verident Plastic colors are completely free of the lifeless, greenish cast found in other color systems. Further, the methods used in incorporating these specially selected, pigmented materials in the tooth mold, enable you to grind, and if necessary, even to re-shape the tooth—*without altering original tooth color!*

Natural tooth colors are almost infinite in number. In every dentition there are variations between centrals, laterals and cuspids. This recognized fact demonstrates the esthetic importance of "blending ability", . . . *an inherent characteristic of UNIVAC Porcelain and Verident Plastic Anteriors.* Also, the different colors of the UNIVAC Porcelain and Verident Plastic Dual-Dial Color Guide *harmonize with each other,* allowing full freedom to reproduce natural variations of color in the same denture.

Dual-Dial colors are incredibly "alive", complementary and consistent . . . close up, as well as across the table . . . without a trace of greenish cast, indoors and outdoors under all normal lighting conditions. You'll prove this in every case as UNIVAC Porcelain and Verident Plastic teeth blend within the oral environment. You see only the smile—not the teeth. The patient is gratified . . .

Correct color and "blendability" . . . Key successful esthetics . . . *they are the Dual-Dial Color System* . . . the basis for the great, growing acceptance of Dual-Dial Color, for UNIVAC Porcelain and Verident Plastic.



SPECIFY WITH THE DUAL-DIAL COLOR GUIDE—FOR FULL AND PARTIAL DENTURES IN UNIVAC PORCELAIN OR VERIDENT PLASTIC.

DUAL-DIAL TOOTH COLORS PRESENT AN "ALIVE" APPEARANCE AND BLEND UNDER ALL NORMAL LIGHT AND ENVIRONMENTAL CONDITIONS . . .

UNIVAC
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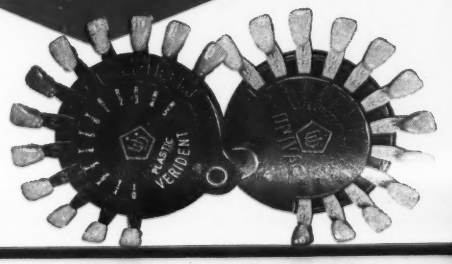

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About Our CONTRIBUTORS

DUANE ARTHUR SCHMIDT, D.D.S. (University of Iowa, College of Dentistry, 1954) Honor Graduate, Pedodontia (State University of Iowa, College of Dentistry, 1957) has been an instructor in the Department of Pedodontia at the State University of Iowa, and is now in personal practice. Doctor Schmidt published his first article in DIGEST in July and follows it with one in the present issue, AN ANALYSIS OF THE PEDODONTIC OPERATORY.

GUY BUISSON, M.D. (Paris, France, 1936) is professor of Oral Surgery and Chief of the Oral Surgery Department in the Dental School of Paris. Doctor Buisson is engaged in the practice of oral surgery and is a member of the Société d' Odontologie. In the current issue he presents an illustrated adaptation of his article, PREPROSTHETIC SURGERY, which has been translated from the original French as it appeared in the publication, *Revue Française d'Odonto-Stomatologie.*

BRUNO B. KIELICH, JR., D.D.S. (St. Louis University, School of Dentistry, 1942) is a general practitioner who specializes in prosthodontics. Doctor Kielich has lectured widely on a variety of subjects. He will be remembered by DIGEST readers for his article on transitional temporary immediate dentures published in June. This month he presents another practical article, POLYSTYRENE BASE DENTURE.

KAROLY BALOGH, M.D. (Budapest University, School of Medicine, 1920) has to his credit more than 150 publications in American and European medical journals. He is the author of a textbook on Oral Surgery, first issued in 1955, and has had thirty years of teaching and research experience in oral medicine and surgery in the University of Budapest. For his first appearance in DIGEST he presents in the current issue a short article, A MAP OF THE EDENTULOUS MOUTH AND THE TONGUE FOR REGISTRATION OF ORAL DISEASE.

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An Analysis of the PEDODONTIC OPERATORY

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• **DIGEST**

Children's dentistry is one of the most important branches of the profession and can be extremely rewarding to the dentist who is gifted for this specialty. In treating the child, however, and helping him to learn how to avoid the deteriorating effects of caries on immature teeth, innumerable unforeseen problems may be encountered. These problems must be solved in order to meet the obligation of helping the young patient to develop a mature functional dental apparatus, free from pain and disease. This paper is an analysis of a particular need in this field. A possible solution to one of the many deterrents encountered in dentistry for children is presented.

Steps for Complete Care

In introducing the young patient to the regime for dental health the following approach will be useful:

1. Show the child the office.
2. Determine the treatment needed to accomplish the desired results.
3. Follow these necessary steps to completion.
4. Conclude treatment with the proper instructions and recall examination.

Dental literature abounds with the reports of dentists presenting their experiences and conclusions on this subject. Most of these articles deal primarily with items 2, 3, and 4. A few [1, 2, 3] describe the introduction of the child to the office from the standpoints of physical approach, vocal impressions and/or maintenance of rapport. One of the most important features of the first visit, however, notably absent from the literature reviewed, is a description of the physical environment of the office for this most important first visit: the dental operatory.

Fear-Arousing Situations

Jersild[4] states that, "Fear arises when we know enough to recognize the potential danger in a situation but have not advanced to the point of complete comprehension and control of the situation."

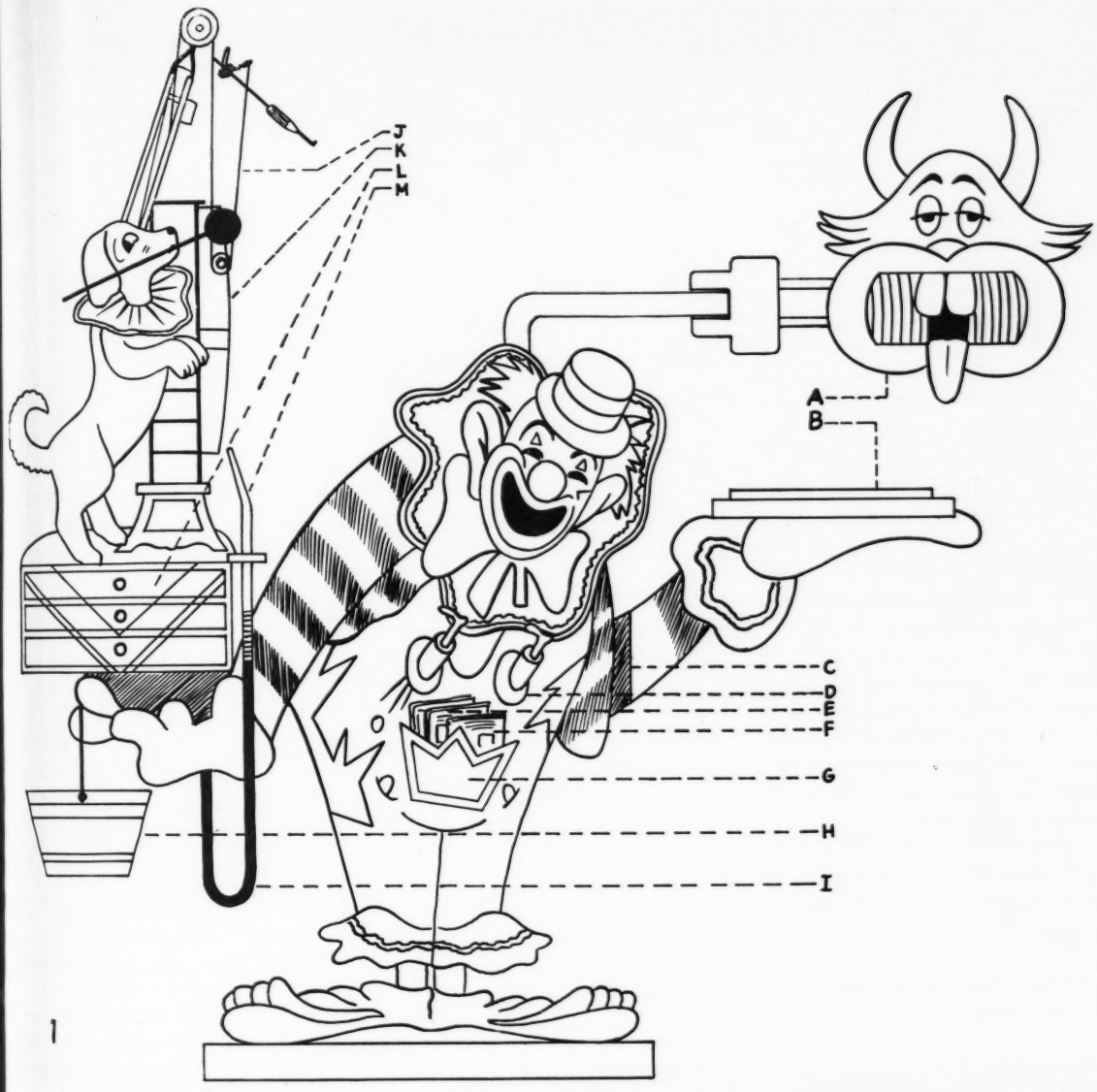
Potential Threats—To the child any unfamiliar object in the operatory could be a threat. This includes numerous so-called standard items in the average office. Basic layouts of office equipment remain for the most part unchanged over the last few decades. Cabinets display rows of mysterious bottles or gleaming instruments. Handpieces dangle precipitously before terrified young eyes. Equipment is glittering chrome, complicated with tubes and trays, aspirators, and sprays. The modern dental office is a dentist's delight and the patient's abhorrence.

Environment Unchanged—It is incongruous that in offices which boast the fastest handpieces, most complicated equipment, and the most superior quality of materials and medicaments the general atmosphere is not dissimilar to that which prevailed thirty years ago.

Patients Sensitive to Surroundings—Practice administrators have long advocated a home-like appearance in the dental reception room. The dentist is aware according to Bordeaux[5] that patients may be sensitive to suggestion indirectly reflected by the interior decoration of the reception room or the color of its walls. Mack[6] mentions total motif decoration and suggests that, "The operating rooms themselves be decorated to make them more appealing to the children." Brauer, and others[7] note that although dentistry for children can be done well in the conventional office atmosphere, "There is no doubt that child's equipment and a room decorated for children do present a psychological advantage in an appreciable number of cases."

Operatory Should be Reevaluated—The reception room is not more important than the operatory. Directives expressed in word and gesture need not completely supplant the subtle influence of music, color, and decor when the patient leaves the reception room to enter the operatory. The dental operatory should be reevaluated in keeping with dentistry's advances in other directions. As a pilot study of this subject, the transformation of a dental operatory in a manner to reduce fear-arousing situations is described.

[1]Klein, Arthur I.: Control of the Dentist in Management of the Child Patient, J. Dent. Child. **23**:97-103 (2nd Quarter) 1956.
[2]Shaw, S. Irwin: Behavior Control By Suggestion, J. Dent Child. **22**:96-103 (2nd Quarter) 1955.
[3]Waterman, George E.: Child Management, J. Dent. Child. **21**:150-153 (3rd Quarter) 1954.
[4]Jersild, Arthur T.: Manual of Child Psychology, L. Carmichael, editor, New York, John Wiley and Sons, 1956, p. 758.
[5]Bordeaux, in Jersild, Arthur T.: Manual of Child Psychology, L. Carmichael, editor, New York, John Wiley and Sons, 1956.
[6]Mack, Edward S.: Practical Pedodontia Practice, J. Dent. Child. **23**:13-24 (1st Quarter) 1956.
[7]Brauer, J. C.; Demeritt, W. W.; Higley, L. B.; Massier, M.; and Schour, I.: Practice of Dentistry for Children. In Dentistry for Children, ed. 3, New York, the Blakiston Company, 1952, p. 9.



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1.
Diagrammatic sketch of the clown dental unit; (a) operating light; (b) bracket table; (c) hinged connector (allows free swing of the bracket table); (d) air syringe; (e) water syringe; (f) reading matter; (g) pocket for holding reading matter; (h) waste receptacle; (i) tube for oral suction apparatus; (j) wall-type motor with handpiece; (k) oral suction canister; (l) instrument cabinet; (m) oral suction mouthpiece tube.

Selection of Decorative Motif

The essential in redecorating a dental operatory is choosing a motif that will be appropriate not only at present but also for some time to come. The motifs suggested by Mack[6] are the Western or Cowboy theme and the animal or circus themes.

Theme Appropriate to Locality Chosen—For the midwestern office described in this article the cowboy theme was not as appealing as the circus theme. Everybody loves a circus. For the young and the old the circus is fascinating. Its appeal is universal and lasting.

Dental Armamentarium Disguised—After selection of the theme the motif chosen must be incorporated into a functional pedodontic operatory with as much of the armamentarium of dentistry as possible, disguised beyond recognition; for these articles less fear-producing objects were placed on view.

Construction of the Unit

Probably no other piece of equipment contains more possibilities for improvement than the dental unit. Actual construction of a disguised dental unit is relatively easy. Since the circus motif was to be used in this case it seemed suitable that the unit be fabricated in the shape of a clown. Water and air syringes with tubing were purchased as well as a dental operating light, glass bracket table

tray, wall motor with handpiece, oral section apparatus, and child's chair with motor base. The component parts of the unit are shown in Figure 1.

Details to be Noted—1. The absence of a cuspidor which is replaced by the oral suction apparatus.

2. Each item of equipment blends into the general motif.

3. The wall-type motor and instrument cabinets are both out of direct vision of the child's eyes when seated in the chair, yet are conveniently arranged so as to remain functional.

4. The comic books are handily placed for use as time-fillers while waiting for anesthesia, or cement or alloy setting-time.

5. The water and air syringe extrude from buttons on the clown's clothing. Their return is accomplished by the simple pulley-weight arrangement shown in Figure 2.

6. In Figure 3 is shown the other newly constructed place of equipment for the office; the supply cabinet with Formica working surface for the assistant. Conforming with the circus theme, the cabinet was built to resemble a calliope.

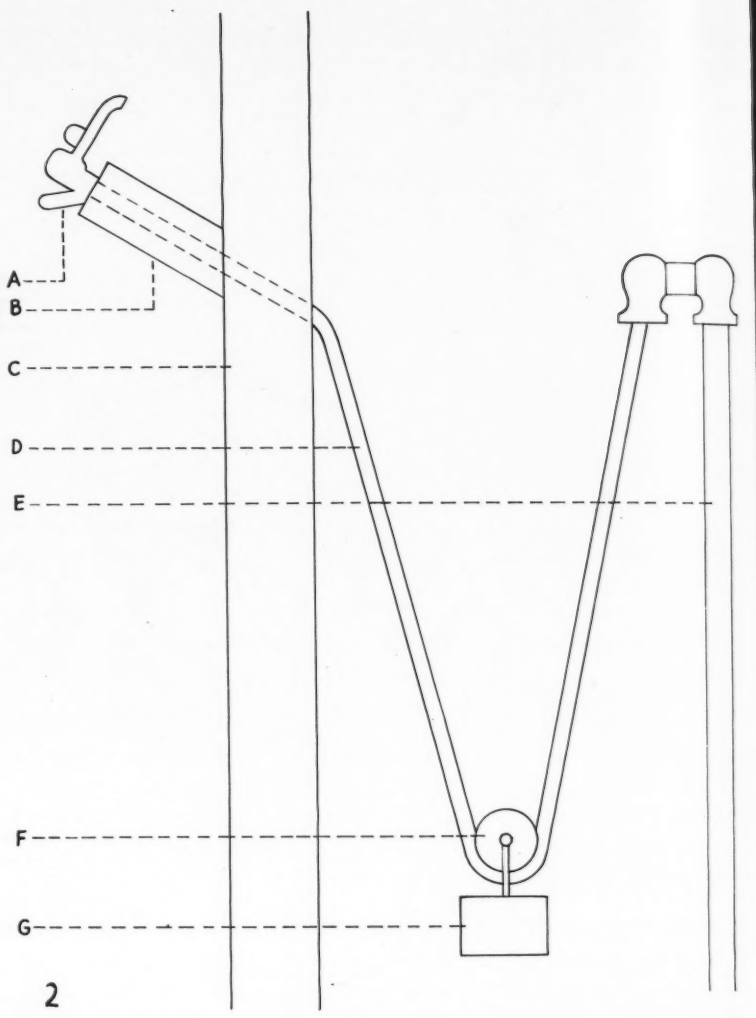
Ceiling Replaced by Canvas—A piece of brightly colored canvas was cut to measurement and installed as the tent or "big top."

Other Disguises—1. The operatory light was disguised by changing it into an animal's mouth with acrylic teeth and tongue.

2. The outside window was barred and a lion drawn on art board placed behind the bars. This proved to be an effective way of bringing the window covering into the general scheme.

3. Wall murals, signs, and cheerful coloring throughout enhanced the illusion of a circus atmosphere.

The doorway entering the operatory has been changed to a cage door with animals peering out from between the bars to help establish the theme. The appointment window in the hallway (Fig. 5) is designated as the ticket window, and a treat tray containing small toys or gadgets to take home placed beneath it helps attract the children back to it when the appointment is concluded. From this window the children also receive their healthy diet



2.
Diagrammatic sketch of air-water syringe connections: (a) syringe head; (b) holder for syringe (prevents tip of syringe from touching clown); (c) clown; (d) flexible tubings; (e) air-water lead-in pipe; (f) pulley; (g) weight.

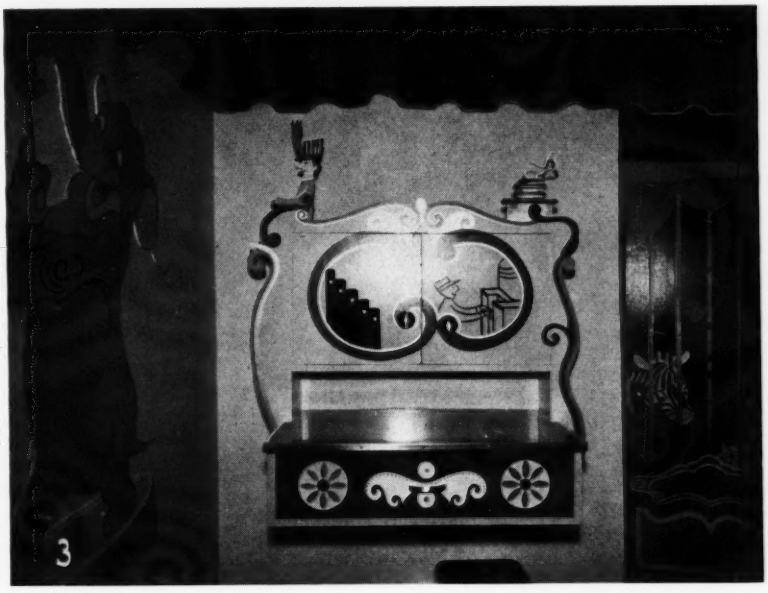
prescriptions (Fig. 6), and new appointment cards.

The Operatory in Use

Final results of an experiment may take years to be determined. This article presents only an advance report on a radical change made in pedodontic operatories and therefore no conclusive statement will be offered. The initial reactions of the child patients and their parents, however, were of interest.

Parents' Reaction—Parent acceptance and enthusiasm were overwhelmingly favorable. The usual comment of parents who have seen the room is "I wouldn't mind having my teeth treated in here." This comment has no clinical value but the fact that parents immediately relate the situation to themselves provides an important clue to the desired approach to the parent, certainly an important aspect of practical pedodontia. Does a stark forbidding dental operatory conjure up unpleasant experiences the parent may have had?

Disguise Complete: Another comment frequently made by parents was, "Can you actually work in here?" This comment was considered proof



3.
Calliope supply cabinet with formica working surface.

of the success of the disguising process.

Professional Interest Demonstrated: To the parent the room apparently suggests an intense interest in the dental welfare of the child. This is the type of parental reflection the dentist wishes to encourage.

Reactions of the Child Patient—The several thousand children who have seen the room have looked at it with emotions ranging from overt fear to extremes of astonished amazement and happiness. In general, the child who is tearful in the conventional operatory reacts almost the same in the circus room. The severe behavior problems may be fewer and may be easier to control.

Results Difficult to Assess: The advantages gained by using the transformed operatory are difficult to gauge precisely. To do so one would have to be remote from the immediate practice or have many years of experience in the operatory on which to base an evaluation.

Response to Special Interest Shown: Some children were resistant and would not willingly leave the parent. Other children when asked if they would like to have their teeth cared for in the circus room answered quickly that they most certainly would like to. Perhaps a child can sense that if someone went to the trouble to do this redecoration that person must certainly have a personal interest in the child.

Summary

The introduction of the child to the dental operatory is one of the most important aspects of dentistry for children. One of the most neglected phases of the introduction is the physical setting. Fear-stimulating conditions are common in the average dental operatory. It is thought that by reducing these fear stimulants the introduction to dental treatment and continued treatment may be accomplished more easily.

It is possible that the dentist who is skillful in dealing with children might complete introductory treatment under adverse conditions and conduct continued treatment successfully. In general, however, there are many obstacles to the successful completion of treatment and the elimination of as many of these as possible is the aim of the average dentist.

The converted objects in the transformed operatory took on the appearance of more familiar less fearful things to the young child. The circus motif was used because most children have an acquaintance with it through school, television, and books.

The dental unit was constructed in the shape of a clown with the addition of purchased dental specialty parts plus locally obtained materials. The remainder of the operatory was decorated in harmony with the circus theme.

Parent acceptance has been exceed-

4.
The Circus Room seen from entrance.

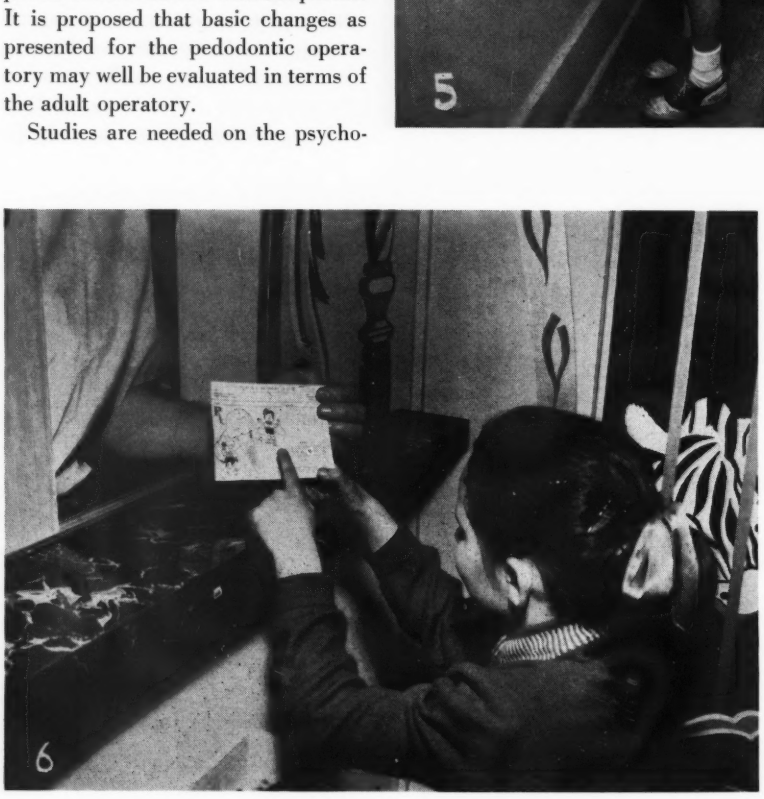
5.
The Ticket Window and hallway showing the cage door leading into the Circus Room. Note tray containing treats (small toys, gadgets) beneath the window.

ingly high. Child acceptance has ranged between the two extremes but has generally been fair to good. This factor is difficult to evaluate objectively. Physical functionability has been good.

This experiment raises a number of questions about the so-called standard dental operatories and their efficiency in helping the child overcome resistance to the important first visit to the dentist and to aid in maintaining rapport on subsequent visits.

It is conjectured that the pedodontic operatory is a handicap to a successful introduction if not designed for the purpose of reducing fear-stimulating situations and to increase patient acceptance. It is theorized that parent acceptance of the operating space is a basic though invisible factor in dentistry for children, affecting directly dealing with the child, or indirectly professional relations with the parent. It is proposed that basic changes as presented for the pedodontic operatory may well be evaluated in terms of the adult operatory.

Studies are needed on the psychologic impact of the dental operatory. The ultimate has not been reached in arrangement or presentation of the operatory to the child patient or to his parents.



6.
Child receiving healthy diet prescription from Ticket Window.

Comment

All children are not problem children. In fact, few children are. It is for the few, however, that the greatest effort is made. Society functions this way as do the professions.

A valuable feature of the experiment is parent acceptance. Parents had an enjoyable experience in dentistry

(*Continued on page* 562)

PREPROSTHETIC SURGERY

GUY BUISSON, M.D.,
Paris, France

DIGEST

Surgery is often useful to the prosthodontist who is constructing complete dentures.

The case may require preparatory surgery which can ensure, if done at the time of final extractions with the prosthesis under construction in mind, more rapid cicatrization of a better quality than that obtained by conventional methods of extraction.

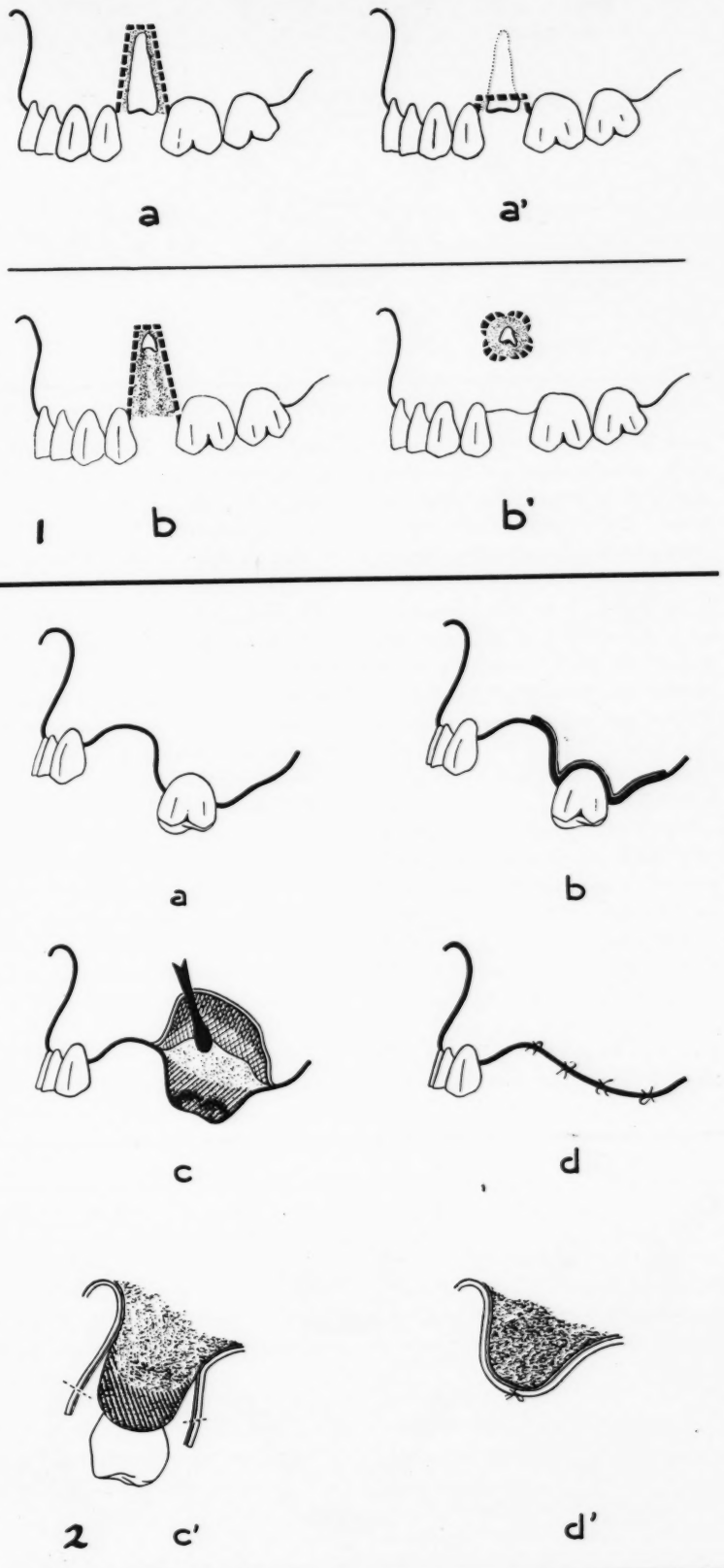
In the presence of anomalies, either congenital or acquired, in an edentulous patient, serious difficulties to the construction of satisfactory dentures may be encountered. Corrective surgery in these cases may be of special value.

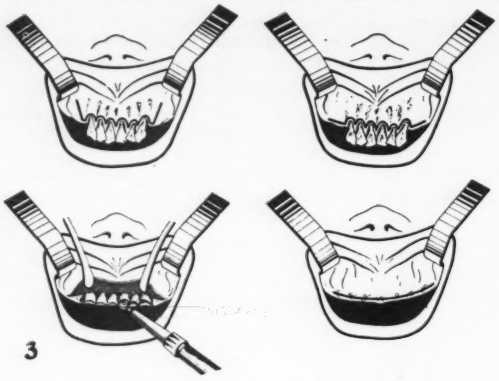
Preparatory and corrective surgery can be combined to advantage permitting extraction of the remaining teeth and surgical correction of existing malformations at a single sitting.

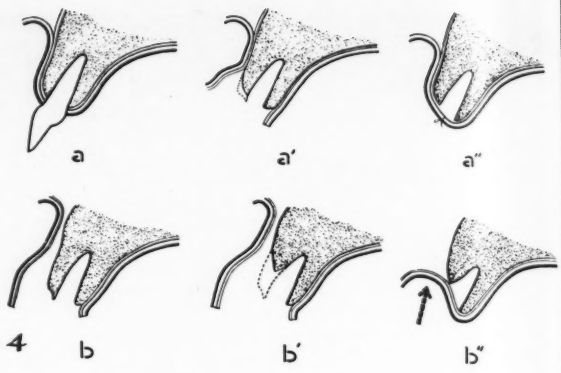
This article illustrates the particular techniques applied in a variety of situations to be found in the edentulous patient for whom full dentures are to be constructed.

Preparatory Surgery

Fig. 1—Preprosthetic surgery actually begins with the first extraction which should be performed with the final denture in mind. The extractions







must be done with extreme care to avoid alveolar fracture. Should this appear to be unavoidable some millimeters of the external table may be removed with a chisel to facilitate the extraction. When surgical extraction is indicated, it is often possible to avoid the removal of the entire outer wall of the socket, resulting in permanent loss of alveolar bone. A and B show removal of excessive alveolar bone tissue. A′ and B′ show limited resection of bone tissue which is usually sufficient.

Fig. 2—Frequently seen is the case of a single tooth when the alveolar process in adjacent edentulous areas has resorbed. When such a tooth is extracted the bony prominence of the alveolus should be corrected.

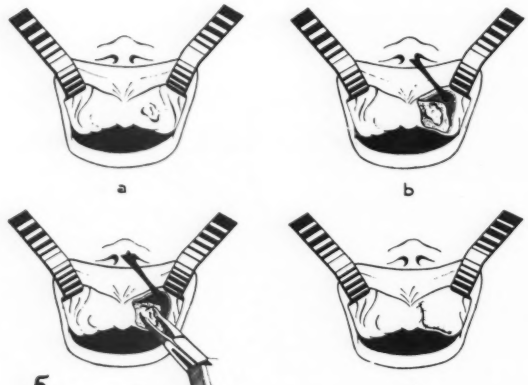
Fig. 3—It is at the terminal stage of extractions that preparatory surgery is of the greatest value. In a single appointment the remaining teeth may be removed, all bony protuberances resected, the contours regularized, and the flaps previously detached carefully sutured.

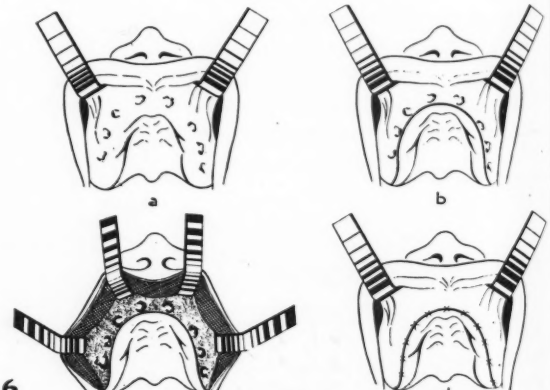
Fig. 4—In the course of this operation, two points must be kept in mind: (1) The correction of the alveolar contour should be done most conservatively. The main task is to trim the alveolar crest and level its contours, in short, to achieve in a few moments what a spontaneous physiologic resorption would take months to accomplish. Except when there are special indications nothing further should be done to prevent the possibility of a secondary and uncontrollable bony resorption. (2) The vestibular mucoperiosteal flap should be detached only to the minimum extent necessary to perform the operation: a, a′, a″: good technique; b, b′, b″: wrong technique; excessive resection of the alveolar crest (b′); the mucoperiosteal flap has been detached too high (b) with the result that when sutures are placed the normal sulcus height is obliterated.

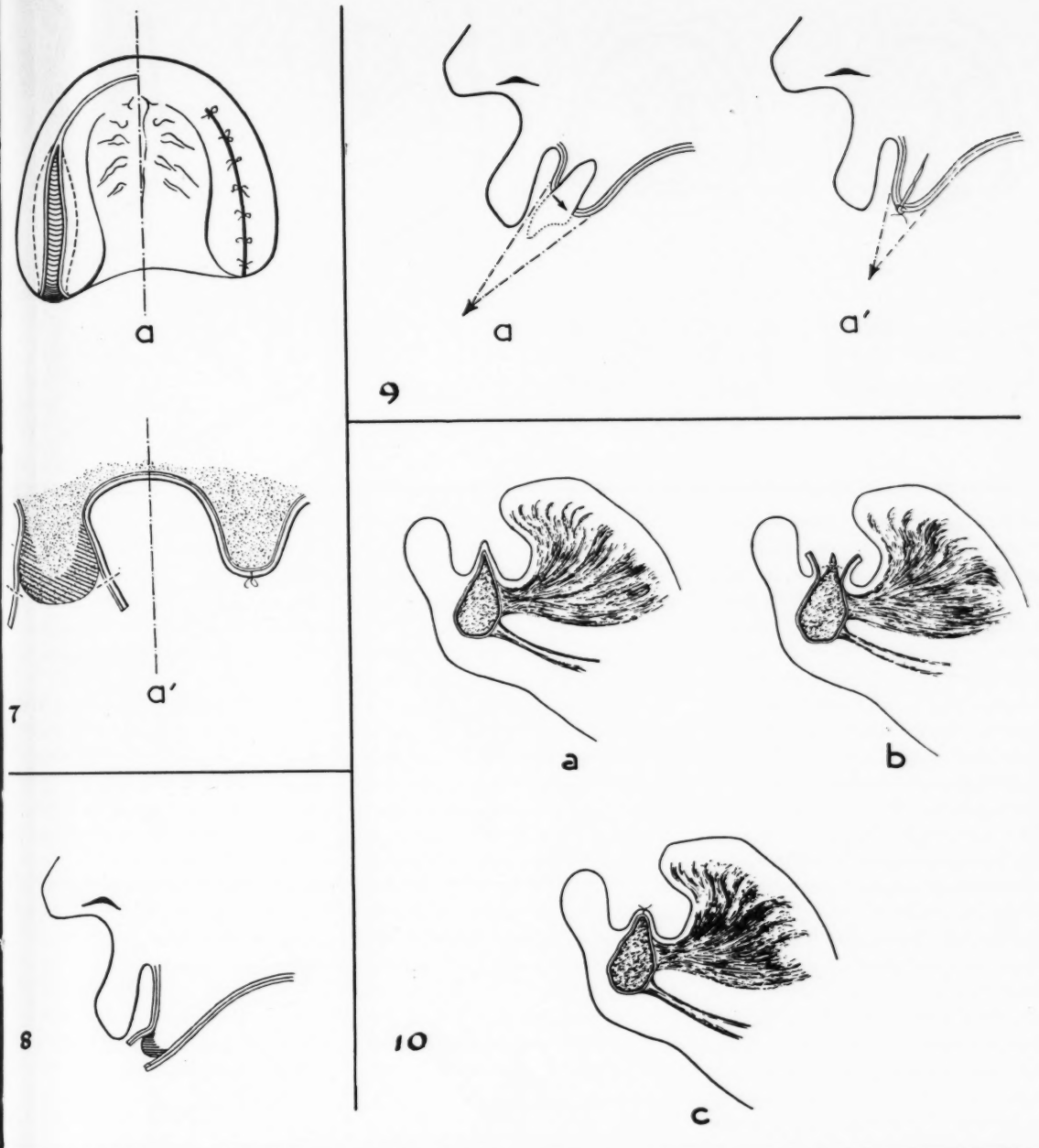
Corrective Surgery—Deformities Of the Hard Tissue

Fig. 5—Surgical correction may be employed for correction of bony deformities or deformities of the soft tissue or of irregularities which exist because of atrophy of the alveolar crest. The steps in the correction of a localized vestibular exostose are shown.

Fig. 6—Contouring of the whole of an edentulous maxilla is shown. It is highly advantageous to make all the maxillary corrections necessary at one sitting. An incision is made from one tuberosity to the other, on a level with the alveolar crest. Because of the length of the incision the vestibular





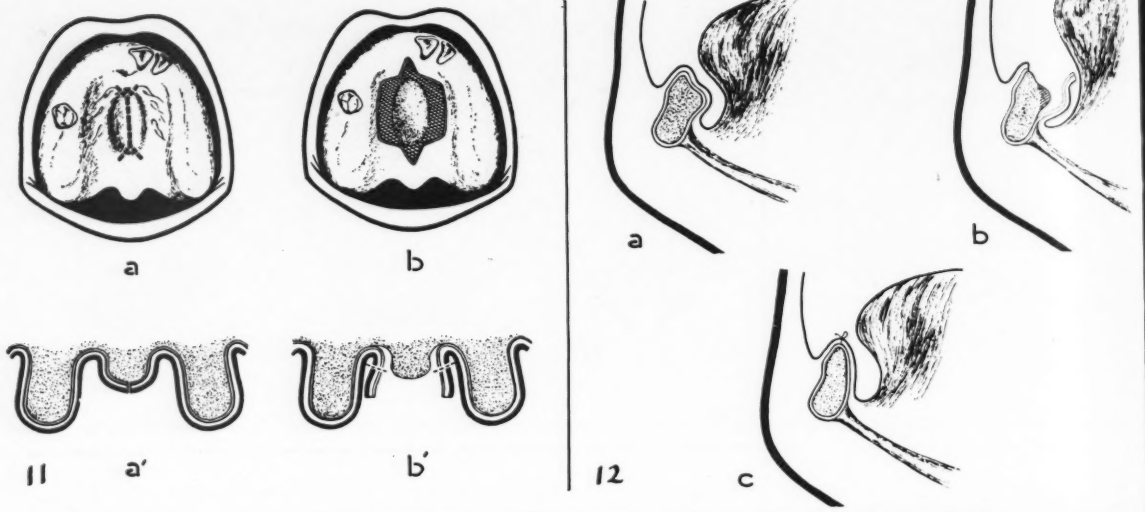


flap may be raised to the necessary height. It is usually not useful to make vertical incisions. Correction of bony protruberances are made.

Fig. 7—Correction of hyperostosed tuberosity is shown. The excess may be localized on the external aspect of the tuberosity or the condition may be generalized. The incision is begun at the posterior aspect of the tuberosity and follows the alveolar crest to the desired anterior position. The mucoperiosteum is detached and reflected, on the vestibular aspect only, or if required, on the vestibular and lingual sides. The excessive bone is reduced with a rongeur, the mucous flaps are trimmed to meet precisely, and are then sutured.

Fig. 8—A lengthening of the alveolar crest in a vertical direction in the anterior region is frequently encountered. This may have occurred because of extraction of posterior teeth long before the anterior ones. In the maxilla the anterior region may extend notably below the occlusal plane. For correction of this situation an incision is made on the alveolar crest, the mucosa is detached, excess bone is removed with a chisel or rongeur until a correct occlusal plane is achieved.

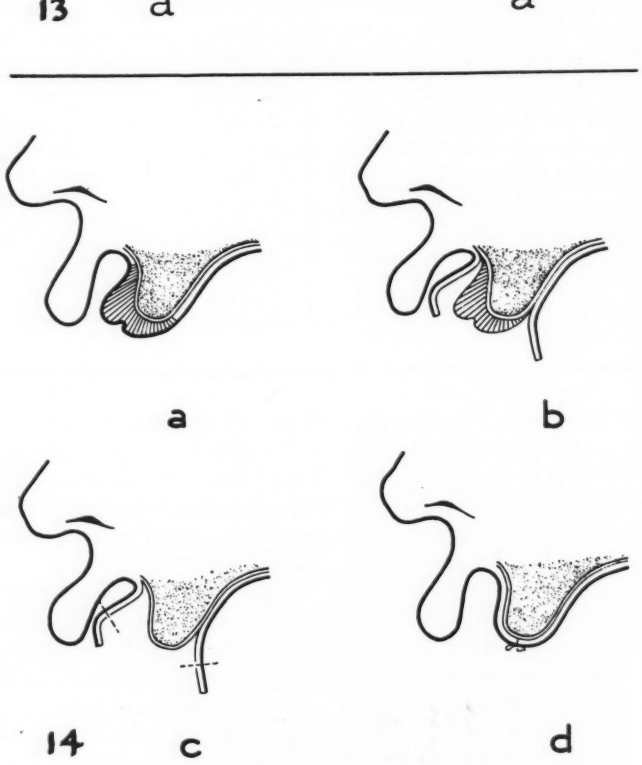
Fig. 9—In the case of alveolar protrusion in an edentulous maxilla the same technique is employed. If correction is preferred, however, before extraction, the method of Dean (1936) may be used: after extraction

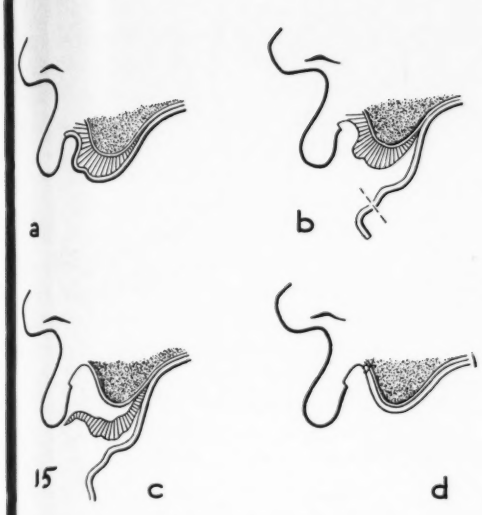


of the anterior teeth, the inter-radicular septa are resected as high as possible with a fine rongeur, in order to create a space between the two tables of bone. The alveolar region is then compressed between the thumb and index finger to approximate the external and internal tables and thus correct the deformity. Resection of the bone in the shape of an inverted V in the cuspid region is sometimes necessary to obtain a good result. This procedure eliminates the possibility of resorption later. The bony tables are shown in contact with each other.

Fig. 10—Correction of a sharp bony alveolar crest is shown. The crest may be sufficiently regular but the sharp edge of the rim which becomes apparent under steady pressure makes the support of any prosthesis, however successfully executed, impossible. Correction of thin crests in which bony tissue is already insufficient must be cautiously undertaken.

Fig. 11—Surgical correction of a torus palatinus is usually done only for a complete denture. The incision is made over the malformation and follows its anteroposterior axis, extending in front of and in back of the growth and terminating at both ends in the form of a V as shown. After reflecting the mucosa the bony protruberance is resected with a bur or chisel. This simple operation must be executed carefully because of the risk of injury to the hard palate.





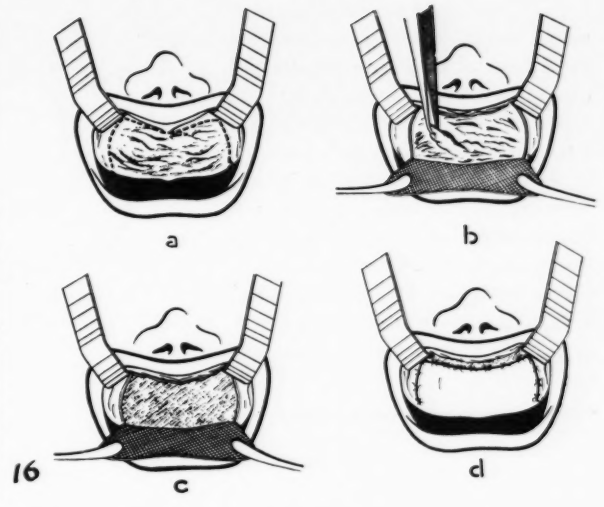


Fig. 12—Correction of the torus mandibularus is effected by an incision anteroposteriorly over the ridge crest and reflection of the lingual periosteum. The excision is usually not difficult to complete.

Corrective Surgery—Anomalies of the Soft Tissue

Fig. 13—The presence of various anomalies of the soft tissue may be the cause of difficulty later in the construction of the prosthesis. Those usually encountered are hypertrophied mucosa, fibrous hypertrophy of the tuberosity region, hypertrophied lingual or labial frenum, cicatricial bands. In the case of a simple hypertrophied mucosa, correction may be completed easily by means of a cuniform resection, the edges sutured together afterwards, as shown.

Fig. 14—In the case of a more complex hypertrophy of the alveolar mucosa, a prosthesis, poorly adjusted perhaps to begin with will shift because of the progressive atrophy of the crest. This will be especially true if because of the lack of posterior teeth articulation involves only the lower anterior teeth. The upper edge of the prosthesis will irritate vestibular mucous membrane in places and will cause the gradual formation of a mass of hypertrophied mucous membrane composed of rolls more or less parallel presenting the classical appearance of a double lip.

Since the base of the excess tissue is usually extensive, removal of the entire mass may result in denuding a large area, sometimes even the whole of the external table. When the two incised edges of the mucosa are joined and sutured the vestibular sulcus may be completely obliterated. Suturing may be avoided and vestibular depth maintained by modelling a flange of impression compound on the peripheral rim of the old prosthesis which must then be left in place until epithelialization. This method, cicatrization by second intention, requires complete immobilization of the prosthesis which is almost impossible to accomplish and which often results in contraction of the cicatricial tissue, and encourages the appearance of additional hyperplastic formations.

The disadvantages described may be overcome by making the incisions, not on the upper and lower edges of the excess tissue, but somewhat toward the middle part. The incisions affect only the mucosa, the dissection of which will determine the formation of the two flaps. After the hypertrophied mass has been excised the flaps, trimmed if necessary, are sutured. The vestibule is thus kept intact.

If the osseous resorption is such that the vestibular depth is still insufficient a plastic operation of vestibular reconstitution may be necessary.

Figs. 15 and 16—Correction of hypertrophic mucosa and deepening of the vestibular sulcus are shown. From the upper edge of the incision a thin mucous flap is dissected extending to the alveolar border, or to the lower edge of the hyperplastic mass. This dissection which extends the entire length of the external aspect of the tumor demands extreme care in operation to avoid injury to the fragile mucous membrane.

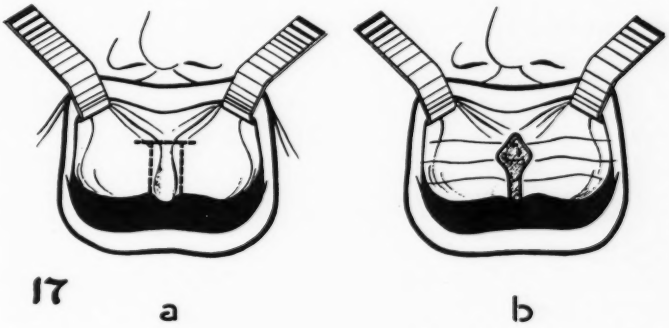
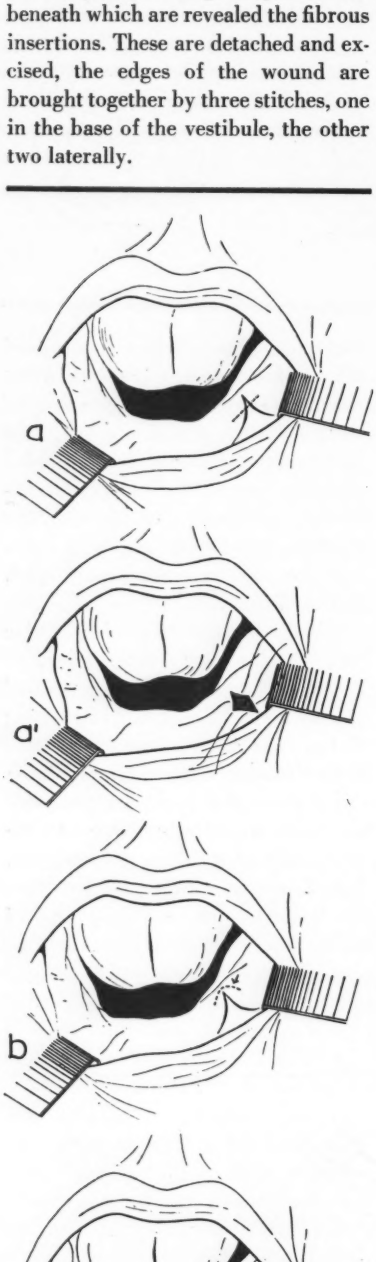


Fig. 17—Among the numerous techniques available for correction of a hypertrophied labial frenum attached extremely low and intruding into the vestibule, the most efficacious includes a transverse incision with scissors or lancet at the middle part of the frenum which opens a lozenge-shaped breach beneath which are revealed the fibrous insertions. These are detached and excised, the edges of the wound are brought together by three stitches, one in the base of the vestibule, the other two laterally.



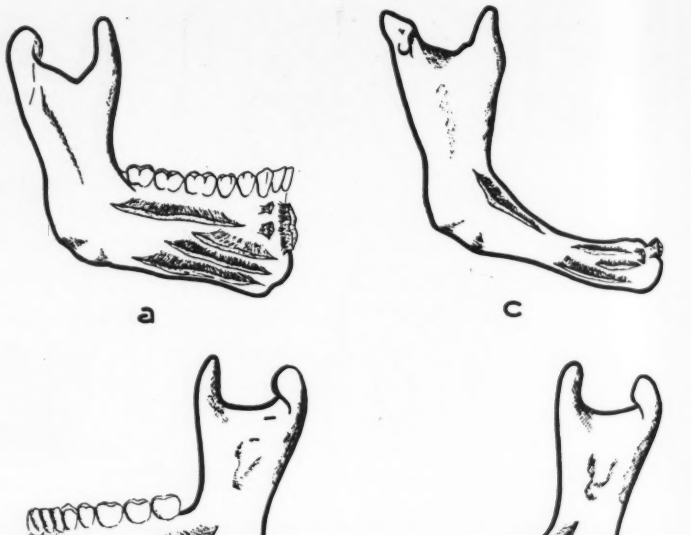
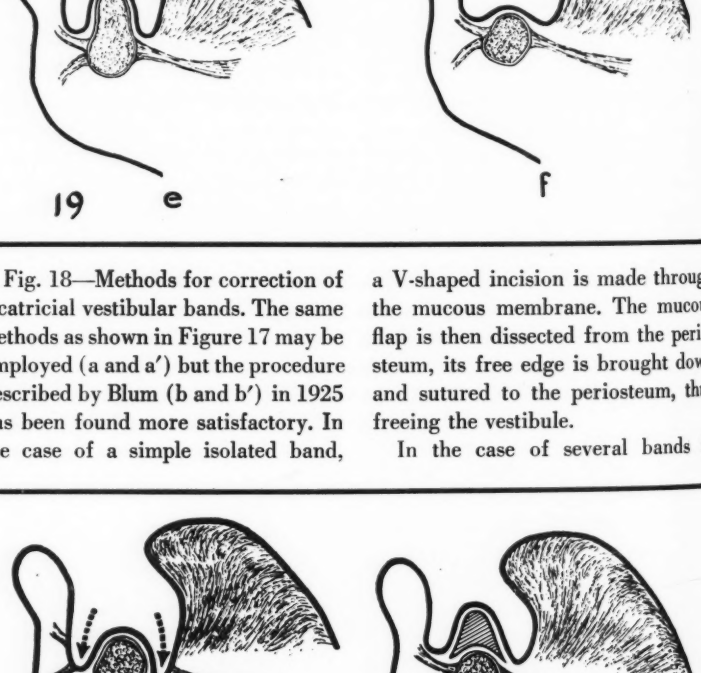


Fig. 18—Methods for correction of cicatricial vestibular bands. The same methods as shown in Figure 17 may be employed (a and a′) but the procedure described by Blum (b and b′) in 1925 has been found more satisfactory. In the case of a simple isolated band, a V-shaped incision is made through the mucous membrane. The mucous flap is then dissected from the periosteum, its free edge is brought down and sutured to the periosteum, thus freeing the vestibule.

In the case of several bands in



juxtaposition a mucosal flap can be made, its hinge turned toward the crest, extending to the depths of the vestibule, and covering an area greater than the zone of implantation of the bands. The mucous membrane of the flap is dissected to the top to reveal the submucous fibrous groups which are excised as in the frenectomy. The mucosal flap is brought down and sutured to the opposite edge and is in this way attached directly to the periosteum.

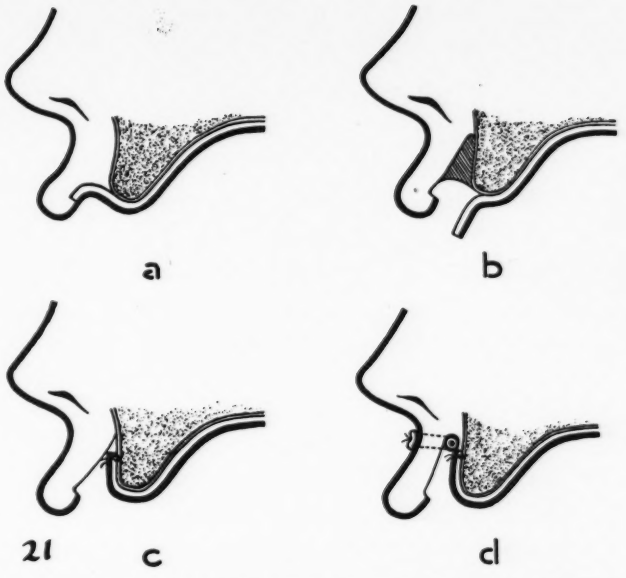
Fig. 19—One of the greatest obstacles to the success of the full denture is without doubt atrophy of the alveolar crest. A crest with normal muscular insertions is shown in a, b, and e; a resorbed crest is shown in c, d, and f.

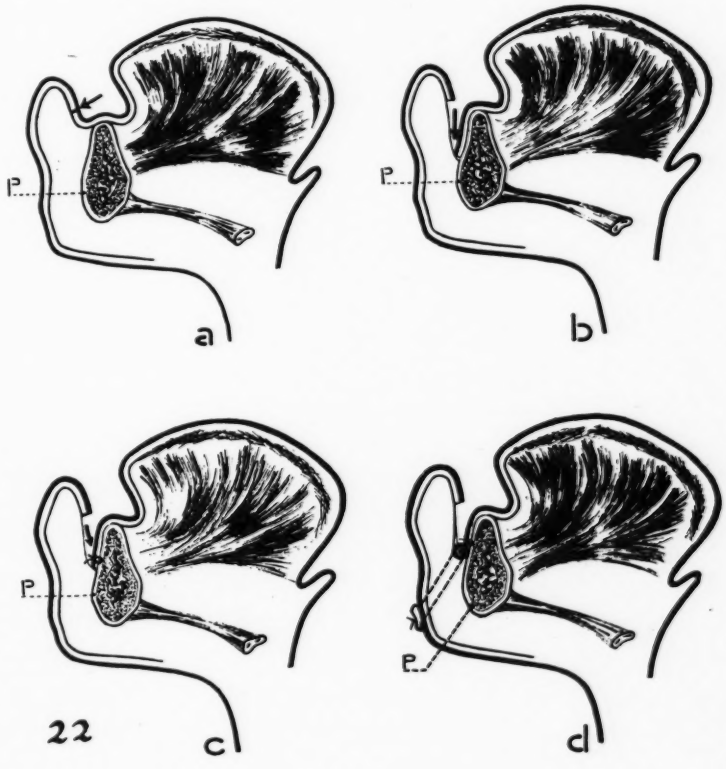
Fig. 20—The two methods preferred for correction of atrophied alveolar crests are shown: a, correction is obtained by deepening of the sulcus; b, correction is achieved by reconstructing the crest with the use of bone grafts. Deepening of the sulcus may be effected by correction either on the vestibular side (in the mandible and maxilla), or on the lingual side (in the mandible).

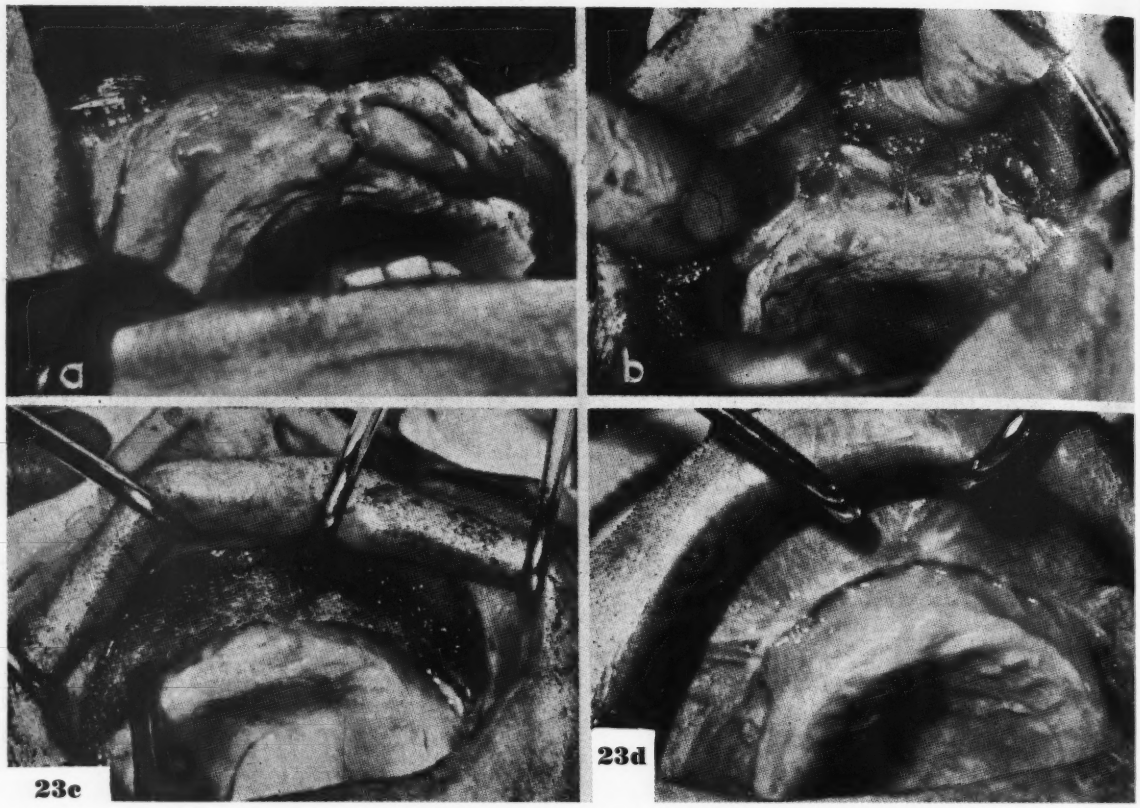
Fig. 21—The procedure of Kazanjian for deepening the vestibular sulcus is highly recommended. The incision is made, not on the crest, but parallel with it and 5 millimeters to 1 centimeter from it on the mucous membrane of the lip or the cheek (a). On the gingival side a thin mucosal flap is made by dissecting the submucous tissues. The muscular insertions underlying this flap are freed from the periosteum which is carefully respected (b). The mucosal flap is then placed on the exposed osteoperiosteal surface, and its free edge is sutured to the periosteum with catgut 000 (c). A new sulcus is thus created. It is important to maintain its depth, either by the immediate introduction of a suitably adapted prosthesis, or, better still, by placing at the bottom of the sulcus a rubber tube held in position by transcutaneous sutures (d).

Fig. 22—The procedure devised by Kazanjian for correction of the atrophied mandibular ridge is shown. (a) An incision is made parallel to the crest, 1 centimeter from the top, in the middle of the labial mucosa. (b) A mucosal flap is dissected and after excision of the submucous tissue, the flap is applied to the surface of the osteoperiosteum. (c) The free edge of the flap is sutured to the periosteum. (d) The depth of the newly created vestibule is maintained by subcutaneous sutures.

Fig. 23—In (a) is shown a vestibule filled with hyperplastic masses. (b) After submucous excision of the hypertrophied material the free edge of the mucosal flap is sutured to the periosteum. (c) The floor of the new



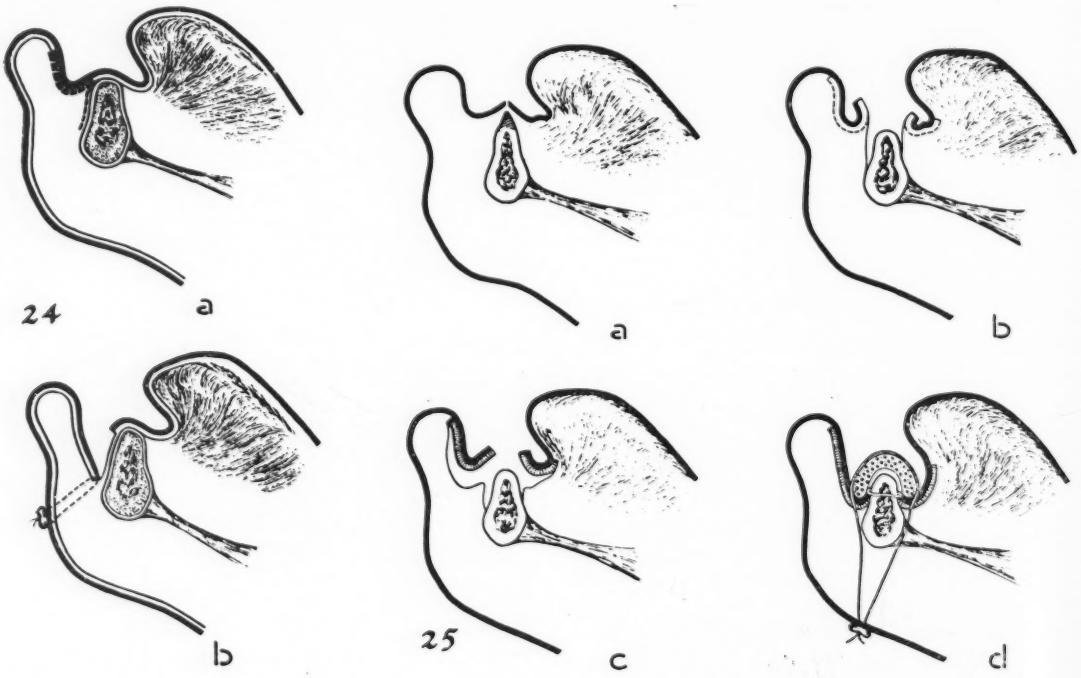


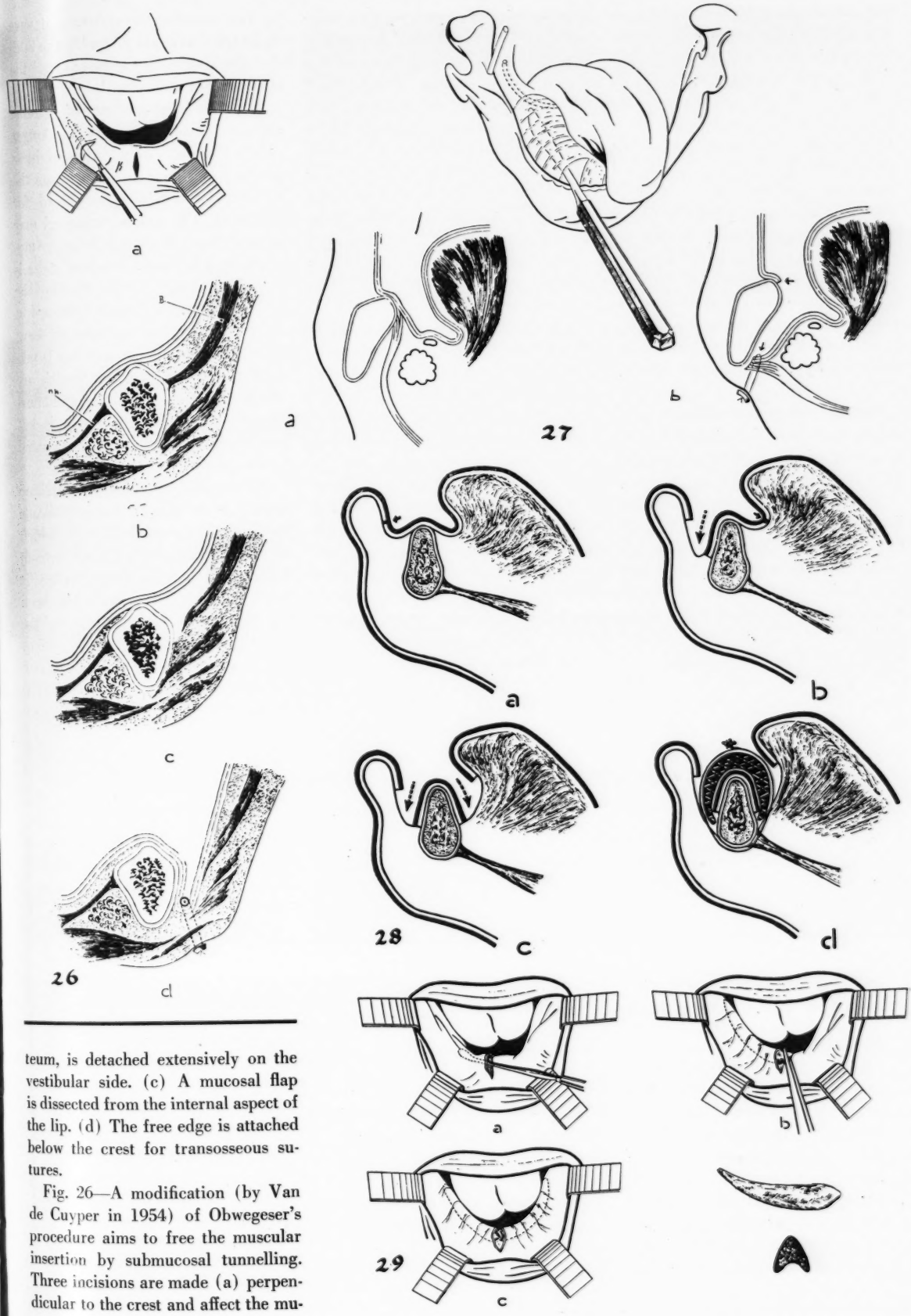


vestibule is treated with some form of medication. (d) The postoperative results.

Fig. 24—Another method (Clarke's procedure) also includes the detachment of the areas affected by osteoporosis as well as the introduction of a mucosal flap for protection.

Fig. 25—Cooley's subperiosteal procedure for treatment of the atrophied alveolar ridge permits correction of the ridge simultaneously with deepening of the sulcus. (a) The incision is made on the crest itself. (b) The flabby tissue, including the perios-





teum, is detached extensively on the vestibular side. (c) A mucosal flap is dissected from the internal aspect of the lip. (d) The free edge is attached below the crest for transosseous sutures.

Fig. 26—A modification (by Van de Cuyper in 1954) of Obwegeser's procedure aims to free the muscular insertion by submucosal tunnelling. Three incisions are made (a) perpendicular to the crest and affect the mu-

cous membrane only. Starting at these incisions, (b) the mucous membrane is detached from the submucous tissues forming four tunnels, limited on the outside by the mucous covering which is now loose, and on the inside by the submucous tissues covering the outer table of bone. The submucous tissues are incised with the periosteum, level with the fibromucous membrane (c). The submucous tissue is scraped, freeing the external table to which the mucous membrane can be directly attached. Until cicatrization has taken place stability may be maintained by a prosthetic device sutured to the mandible or by transcutaneous sutures (d).

Fig. 27—Deepening of the lingual sulcus may be accomplished by detachment of the mylohyoid muscle. This method, described by Trauner (1952) is suitable for cases of alveolar resorption affecting the mylohyoid line. In these difficult cases the alveolar crest appears completely lost between the reflection of the vestibular mucosa on the outside and the floor of the mouth on the inside, where the sublingual muscles may extend over the crest with movements of the tongue. The incision is made through the mucosa from the third molar region to the incisor region, some millimeters inside the crest. After retraction of the mucous flap, the surface of the mylohyoid muscle is exposed. A blunt instrument is inserted from front to rear under the muscle which is severed close to its mandibular insertions. At once, the floor of the mouth collapses and the inner surface of the body of the mandible is exposed. The edge of the mucosa and the muscle are then attached to the skin by two mattress sutures which are tied over a button.

Fig. 28—A procedure proposed by Skaloud and Szekeley (1949) is available which tends to deepen both the lingual and vestibular sulci of the mandible. A prosthesis is made and then corrected by trimming according to the operation to be done. This includes incising the mucous membrane from cuspid to cuspid on both the vestibular and lingual sides to the extent of the adhering fibromucous membrane. The lower flap and the underlying soft parts are detached, leaving the periosteum intact, brought down to the maximum extent, and sutured to the periosteum. The top of the crest remains covered with a fibromucous band. The prefabricated prosthesis is placed in position and fixed by two metallic circumferential wire ligatures to the mandible. On the 20th day the sutures are removed and the surfaces are epithelized.

Fig. 29—In some cases of extreme atrophy osseous support no longer exists. Processes of addition or bone grafting, designed to reconstitute the alveolar bone will be required for treatment. The grafts employed may be cartilage or spongy bone. Autografts may be used. The first stage is a prosthetic stage. On the model of the jaw to be grafted crests are shaped in the form they are intended to have after treatment. An impression is taken of these models, other models are cast to be used for making a channel adapted to the jaw. A space is left free representing that to be occupied by the grafts.

The surgical stage includes making tunnels in the fibromucous membrane and covering the part of the jaw which is to receive the grafts. The periosteum is detached and the bony surface is freshened. After the graft has been inserted, the access is sutured and the prosthesis, in place, ensures retention.

Adapted from *Revue Française d'Odonto-Stomatologie* **6**:1323-1370 (November) 1959.

An Analysis of the Pedodontic Operatory

(*Continued from page* 552)

through the reports of the child. The room has helped make many parents conscious of the importance of children's dentistry.

An attractive atmosphere does not replace skill in dealing with children. Disguising a dental operatory as described is merely intended to be an aid toward accomplishing a more satisfactory introduction to the dental office.

504 *Carver Building*

Diagnostic Use of X-ray

JARRELL E. MILLER, M.D., and GERALD E. SWINDELL, M.Sc., Dallas, Texas

Conclusions

X-rays used in medical diagnosis are not harmful; they are beneficial. It is the physician's responsibility to use judgment in the application of any hazardous medical procedure to a human being. No one else should have this exclusive privilege. The practitioner who uses radiation with conservative judgment and skill should not be made to feel uneasy about its use. The potentiality of causing damage to future generations should not prevent the real benefit to be obtained by the use of radiation in the present generation. The practitioner who uses common sense will view the current lay and scientific alarm about radiation dangers in its proper perspective. Data supplied by geneticists, radiation biologists, and physicists are important contributions to basic science and should be viewed in that perspective. Those who work with radiation every day and who accept the occupational risks do not fear radiation but respect it.

From *Journal of the American Medical Association* **170**:765 (June 13) 1959.

1.
Stone casts are made from these completed impressions.

POLYSTRYRENE BASE *Denture*

BRUNO B. KIELICH, Jr., D.D.S., Buffalo, New York

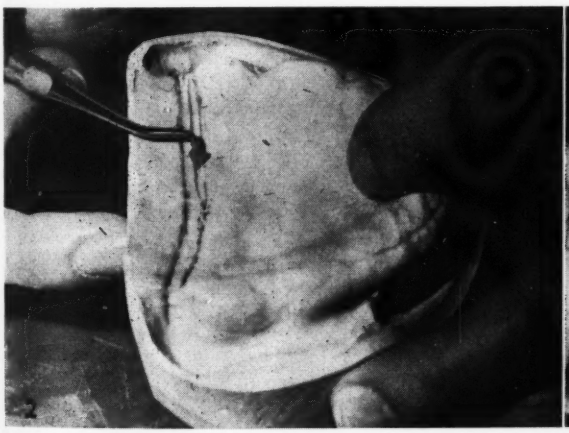
DIGEST

A step-by-step description of a complete denture technique is presented in which a denture base of polystyrene resin is used as a record base. The base is then made into a complete denture by the attachment of teeth with polystyrene or acrylic resin.

2.
A posterior palatal seal is made on the stone cast.

3.
A layer of wax, the thickness of two sheets of baseplate wax, is adapted and sealed to the cast.

4.
The wax base is reproduced in polystyrene by the laboratory.

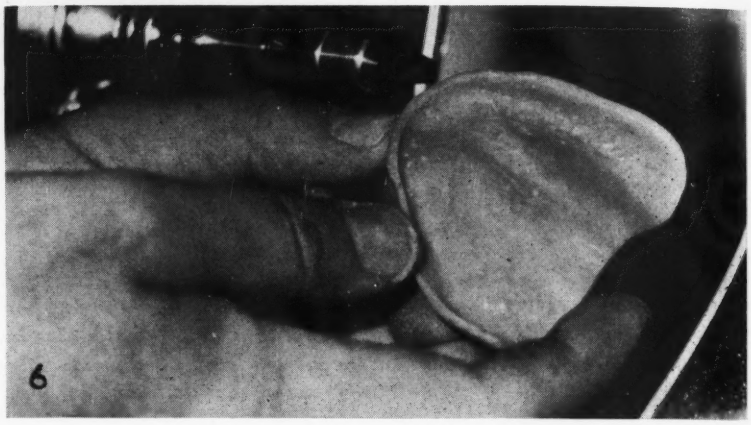


Material Makes Technique Practical

Sometimes a procedure which is sound in principle must await the development of a suitable material before it can be adapted to practical use. Teeth have been attached successfully to metal and vulcanite bases although bases of acrylic resin failed because of warpage of the base during the elimination of wax preliminary to the addition of teeth. A full denture base of polystyrene resin, however, with a thermal rigidity range of 220° Fahr-

5.
Trimming may be done with sandpaper cones or plastic cutting rotary steel files which leave a smoother finish (Heller Co.). The bases are polished with pumice.

6.
The bases are tried in the mouth for accuracy of fit. Areas of impingement are corrected with burs or stones.



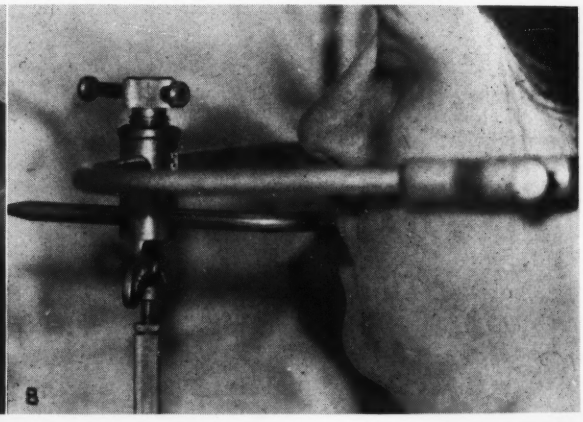
enheit to 238° Fahrenheit is not distorted by brief exposure to boiling water.[1]

Advantages of Polystyrene Resin

A duplex method of fabricating dentures which is possible with this material has the following advantages:

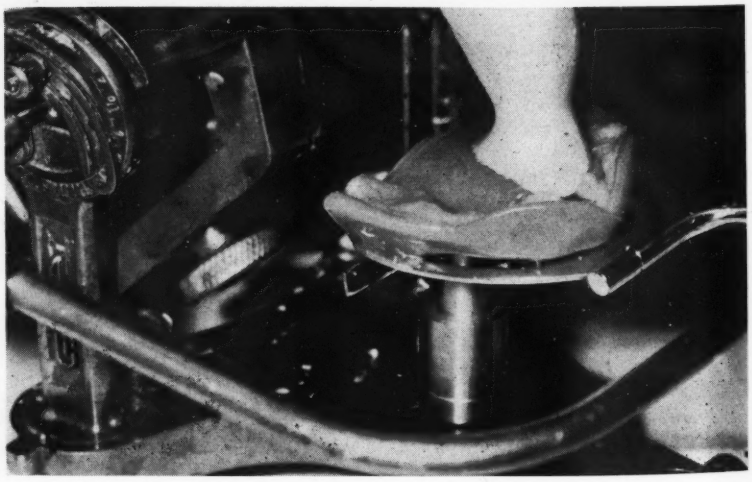
(1) Retention and comfort of the denture base are determined before

[1]Jectron Company: Personal communication.
[2]Perkins, Robert R., and Wheatcroft, Merril G.: Changes in Intercast Dimensions Produced by Mounting Procedures, JADA **59**:693 (October) 1959.



7.
A face-bow fork is attached directly to the upper base.

8.
The relationship of the maxillary ridge to the middle of the glenoid fossae is determined by adjustment of the face-bow.



9.
The upper model is mounted so that the occlusal surface is parallel to the base of the articulator. Undercut areas are eliminated with wet paper tissue to facilitate removal of the base.

10.
An occlusion rim is attached to the upper base. The labial contour is restored and the plane of occlusion and median line are recorded.

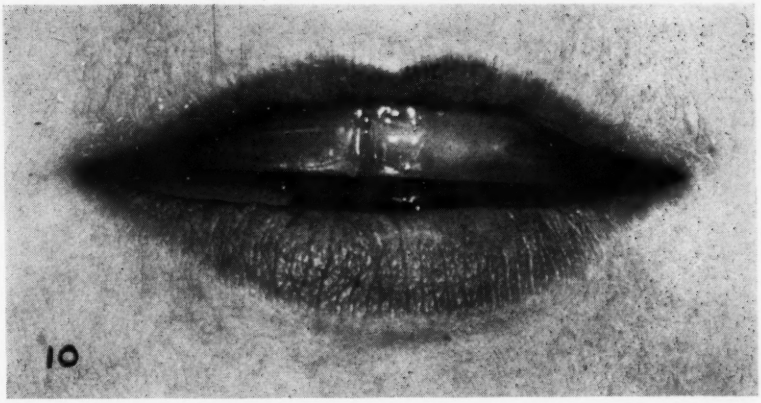
11.
A stop of hard wax is placed on the anterior portion of the lower denture base, to approximate the height and position of the lower teeth.

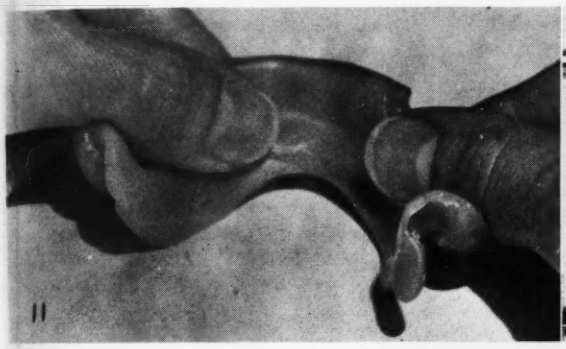
12.
The occlusal vertical dimension is determined and the wax stop is chilled.

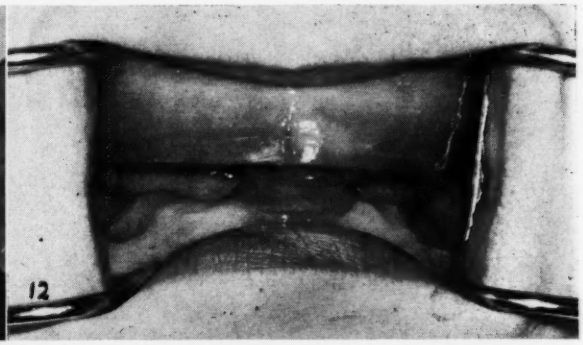
13.
Softened beeswax is placed in the posterior regions of the lower base and the patient is asked to close until the stop just touches the upper occlusion rim. Soft wax, in the molar region only, provides neuromuscular guidance for centric position of the mandible.

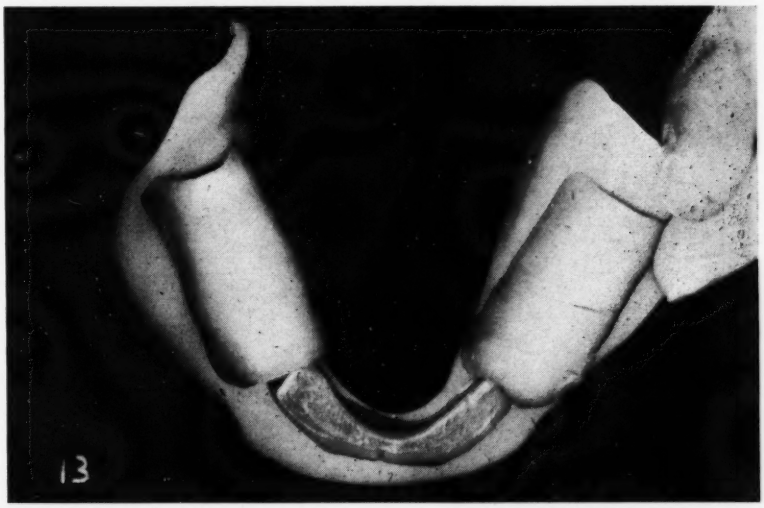
14.
Zinc oxide-eugenol impression paste may be interposed to minimize and equalize pressure and to cement the bases together. Tracing devices may be used but the accurate fit of the bases usually makes them unnecessary.

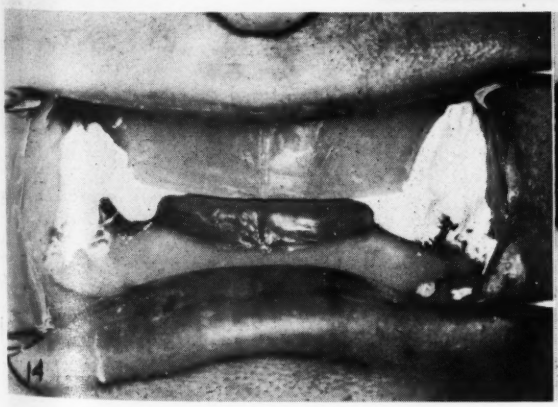
15.
Note clearance in the upper tuberosity and retromolar triangle region. If the bases contact, another registration should be taken after trimming the bases. Registrations in lateral and protrusive positions may be made.

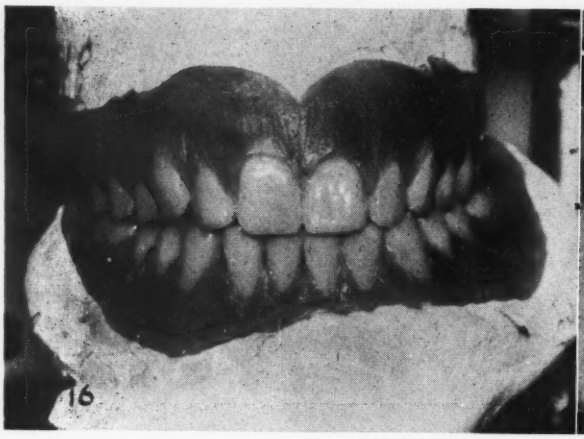


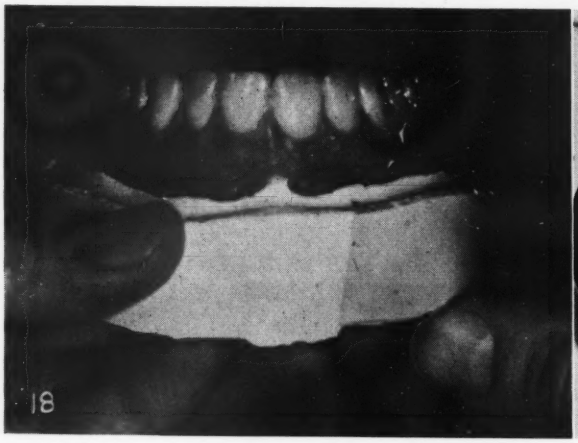


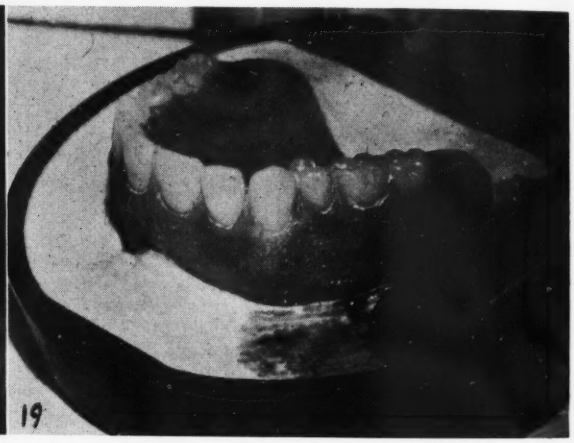












16.
After mounting the lower base, teeth are arranged with pink hard wax to make trial dentures.

17.
Accurate fit and natural appearance enhance the patient's confidence. Trial dentures may be taken home.

18.
The trial dentures may be returned to the laboratory for completion in polystyrene or acrylic resin. If the dentures are to be completed with acrylic resin, the trial denture is boxed with wax and plaster is poured into the base.

19.
After the trial denture is invested in the lower half of the flask, the land is painted with separating medium.

20.
Stone is used to invest the teeth to just above the occlusal surfaces.

21.
Separating fluid is applied and investing completed with plaster or stone.

22.
After immersion in boiling water for 5 minutes the flask is opened and flushed clean with boiling water containing a detergent.

23.
While still hot, the stone is painted with 2 coats of alginate tin foil substitute.

24.
A veneer or other type of labial characterization may be employed.

---

the dentures are completed. If the fit is unsatisfactory, correction is made before proceeding.

(2) Stable bases are provided for more accurate determination of vertical dimension and centric relation. The importance of this factor cannot be overemphasized; it is impossible to measure to the millimeter between the teeth or rims if the bases are several millimeters off the tissues.[2]

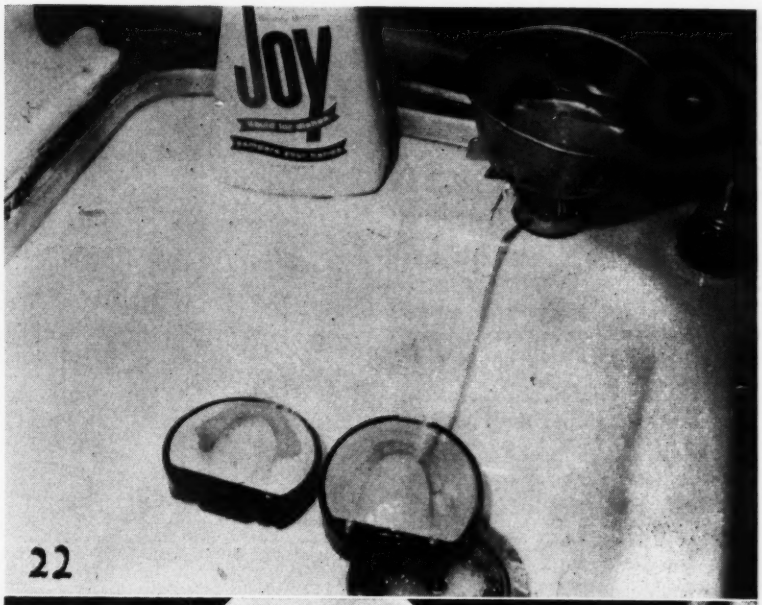
(3) Polystyrene bases occupy less interocclusal space than re-enforced and stabilized (lined) shellac baseplates. They can be ground thin without distortion when positioning of the teeth requires this.

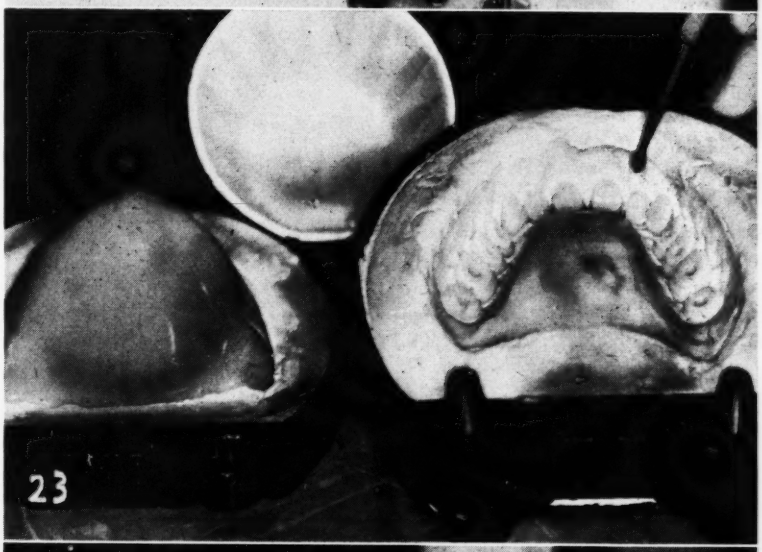
(4) They are not warped by the shrinkage of cooling wax.

(5) The trial dentures accurately reflect the retention, occlusion, stability, and appearance of the completed dentures.

(6) The trial dentures may be taken

25.
Acrylic dough is placed over the teeth and covered with a plastic sheet. The flask is closed and pressed. The flask is opened and acrylic added if needed or surplus trimmed. The flask is closed again without the intervening plastic sheet so the acrylic contacts the polystyrene base.





26.
The denture is processed according to the recommendation of the manufacturer of the material used. Satisfactory results will be had by processing for 8 to 9 hours at 165° Fahrenheit.

27.
After deflasking, adhering stone can be softened by soaking the dentures in a saturated solution of sodium citrate with a drop of wetting agent added.

28.
Duplex dentures in patient's mouth. Union of polystyrene and acrylic is permanent with no separation or seepage.

home by the patient for consultation with family and friends. This is not advisable with ill-fitting and often unsightly shellac bases.

Conclusions

A study of 281 polystyrene base dentures in use over a 4-year period demonstrated that:

(1) The satisfactory original fit is maintained.

(2) There have been only two cases of breakage of the polystyrene base: (A) a labial flange broke from a denture that had been dropped to the floor; (B) an excessively thinned flange broke in use (repair is made with autopolymer resin).

(3) Accurate trial dentures assure patient satisfaction.

4000 *Main Street*

The EDITOR'S Page

THE INFANT born with a cleft palate may be a more grievous cripple than the baby born with other body defects. The child with a "crippled face" may immediately become the victim of heedless surgery with the result that his deformity is compounded. The distressed parents, the precipitant pediatrician, the rash surgeon may combine—in good faith, but with bad judgment—to inflict added damage by early postnatal surgery. To say that many of these infants are subjected to traumatic surgery by incompetent operators is a strong indictment, but one that must be made in the cause of accurate reporting. Every dentist has seen the tragic results of this kind of bungling in which growth centers and tooth buds were sacrificed. The result: a maxilla that cannot keep pace in growth and development with the other parts of the skull.

The philosophy of surgical nonintervention has been admirably expressed in a new book by Harkins:[1]

"Many postoperative failures might be avoided if surgery on the palate would be delayed until sufficient lateral and anteroposterior growth has been attained to estimate the possibilities of obtaining and maintaining functional tissue closures. The palates of an infant have not attained this growth and frequently surgical closures which might be functional during infancy result in postsurgical failures as the palatal growth progresses in childhood, adolescence, and early adulthood. These failures might be prevented or minimized if surgery had not been attempted during infancy and the palatal growth progressed unimpeded until at least age six. Although the palates continue to grow anteroposteriorly until approximately age 21, it is reported that the lateral dimension has been practically attained at age five. It would appear that it is during the early palatal growth that the most devastating restrictions of growth can occur from surgical manipulations of tissue.

"The survival of the infant is not seriously threatened by a cleft palate and does not 'constitute a surgical emergency.' Special feeding methods provide the infant with nourishment, which is the most important consideration at this time. Deglutition compensations are easily learned. Speech at this age is not a consideration nor will it be for several years. There are no immediate damages to the infant if the palates remain untreated. The early closure of the lip is performed to improve appearance and to establish muscular movements necessary for sucking.

"There are degrees of cleft palate in which surgery at any age should be contraindicated, and any surgery performed on such palates will inevitably result in gross failures. Surgery may be indicated or contraindicated, but this decision is more reliably determined after sufficient palatal development has occurred rather than in infancy.

"The postponement of surgery does not imply that no palatal restorations can be provided for the young child. It is possible to construct an adequate prosthesis after the eruption of deciduous teeth at two and a half or three years of age and this should be attempted regardless of the decision of the palatal treatment after sufficient growth has occurred."

Another advancement is the combination of orthodontic appliances with the framework of the speech aid. Until recently prosthesis was delayed from two to five years to provide orthodontic treatment when it appeared advisable to utilize the remaining teeth and obtain a more satisfactory dental alinement. To deprive a patient of a needed restoration for many years did not seem justifiable in modern rehabilitative concepts. The combination of orthodontic and prosthetic treatment permits the patient to derive benefits from both procedures simultaneously.

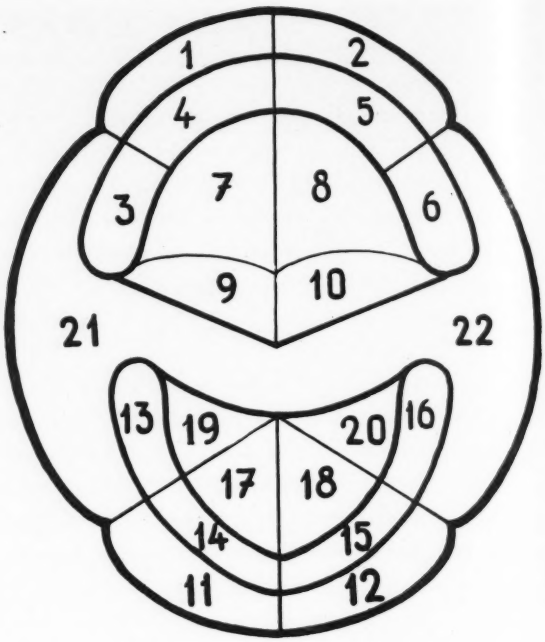
To allow the maxilla of the child with a palatal defect to grow and develop according to the biologic timetable, Harkins demonstrates how the skills of the orthodontist and the prosthodontist may be combined.

For more than 25 years DENTAL DIGEST has urged dentists to accept their responsibility on the team of rehabilitation for cleft palate cripples. When this campaign was begun dental schools and hospitals had neither seen their obligation nor accepted the challenge. These attitudes have changed. Now every dental school of any consequence offers courses to students on the correction of cleft palate.

[1]Harkins, Cloyd S., et al.: Principles of Cleft Palate Prosthesis, New York, Columbia University Press for Temple University Publications, 1960.

A Map of the EDENTULOUS MOUTH *and the* TONGUE *for the Registration of Oral Disease*

KÁROLY BALOGH, M.D., Budapest, Hungary*



1.
Map of the edentulous mouth.

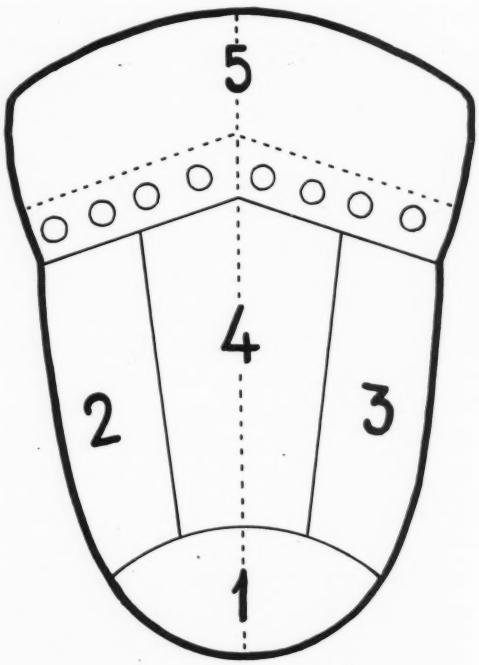
DIGEST

This article describes a mapping system of the edentulous mouth and tongue which permits simple and adequate localization of oral disease. The information obtained may be filed for reference on suitable cards.

Mapping System Devised

Experience has shown that the localization of lesions on the oral mucosa and tongue in the terminology of descriptive anatomy is frequently inadequate. For purposes of registration a mapping system has been designed which is helpful in the recording of oral pathology, biopsy sites, and treatment areas.

*From Department of Oral Surgery, Budapest University, School of Dental Medicine



2.
Map of the dorsum of the tongue.

Plan of Mucosal Surface—The diagram of the edentulous mouth is shown in Figure 1. The mucosal surface has been divided arbitrarily into 22 fields:

1. Fields 1 to 10 refer to the upper half of the mouth, while fields 11 to 20 represent the lower half.

2. The mucosa of the lips is also included and is referred to as fields 1 and 2, and 11 and 12.

3. Fields 21 and 22 show the buccal mucosa on the right and left sides, respectively.

Orientation Simplified—It is evident that in this diagram the upper half of the oral cavity is the mirror image of the lower half (except for the buccal fields). This fact is used in the numbering of the fields and serves to simplify orientation. The numbers of the lower fields are 10 greater than those of their mirror images in the upper mouth. Even the fields of the hard and soft palate (fields 7 to 10) can be projected to the floor of the mouth (fields 17 to 20).

Dorsum of Tongue Mapped—A similar system is used for the mapping of the dorsum of the tongue (Fig. 2). This map also permits the localization of taste and sensation, in addition to morphologic changes and operative sites.

Conclusion

These systems have proved to be useful in clinical practice and have been adapted to filing cards. It is believed that mapping systems are especially suited for detailed clinicopathologic studies in large groups of patients, because they provide simple and unequivocal recorded information.

Mária Utca 52

MEDICINE and the Biologic Sciences

Circulation in Cardiac Patients

The resting cardiac output is generally much lower in patients with mitral stenosis than in healthy subjects. Even when the output is within normal range, increased respiratory effort makes greater demands on the blood flow. During exercise, these patients are usually unable to raise this limited cardiac output to meet the body requirements. Thus, the necessary circulatory adjustments are achieved by a reduction of blood flow to the resting muscles, skin, splanchnic area, and kidneys.

In healthy subjects, femoral venous oxygen saturation falls sharply in the first minute of leg exercise, then rises and recovers rapidly after exercise. Heart patients capable of an increase in cardiac output have a similar rise in saturation during exercise. However, in patients whose cardiac output is impaired by exercise, saturation remains steady or even decreases slightly after the initial fall. In extremely disabled patients, the femoral venous blood may be completely stripped of oxygen at times during exercise.

The average blood flow to the legs in cardiac patients during exercise is only about 20 per cent less than that in normal subjects. In patients with mitral stenosis, leg exercise produces a sharp and sustained reduction in blood supply to the forearm muscle. Healthy subjects have no important changes in forearm muscle circulation during leg exercise.

In healthy subjects, the blood flow to the skin is transiently reduced at the beginning of exercise. Then it is considerably increased to allow increased heat loss as exercise proceeds. Severely disabled cardiac patients are apparently able to inhibit this skin vasodilation and the initial fall in skin circulation, which is low even at rest, is sustained throughout exercise. Some patients with a nearly normal exercising cardiac output, have a normal response.

With skin circulation reduced during exercise in severe mitral stenosis, the mechanisms of heat loss are not completely understood. Hyperventilation increases heat loss from the lungs and it is possible that heat production during muscle contraction is reduced. It is also possible that small amounts of exercise tolerated by these patients do not greatly disturb heat balance.

Both splanchnic and kidney circulation are greatly reduced in cardiac patients during moderate exercise, and this may be partly responsible for the disturbance of liver and kidney function sometimes seen in ambulatory patients. Splanchnic blood flow, in particular, may be depressed for a considerable length of time after exercise.

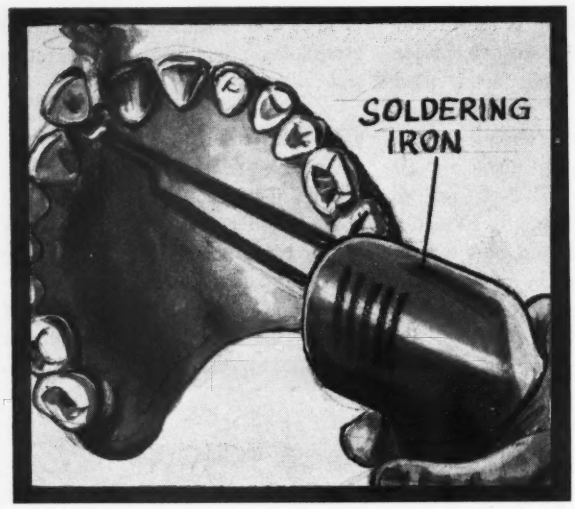
Cerebral blood flow may be slightly below normal in resting cardiac patients, but as in healthy subjects, exercise produces no appreciable change. Coronary blood flow appears to remain at normal levels in these patients. Probably the normal arterial pressure essential to adequate perfusion of the brain and heart is maintained despite vasodilation in the exercising muscles by vasoconstriction in resting muscles. Most of the changes in regional circulation observed in cardiac patients probably occur in healthy persons during vigorous exercise.

Donald, Kenneth W.: Exercise and Heart Disease, British M. J. **5128**:985994 (*March*) 1959.

Fever of Undetermined Origin

Fever of unknown origin may be of

(*Continued on page* 579)



1

Clinical and Laborator

Removal of Porcelain Denture Teeth

Edward W. Mikula, D.D.S., Chicago

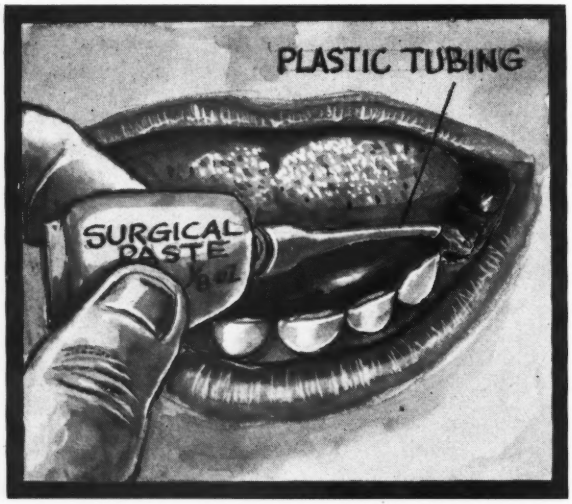
1. Press the tip of an electronic soldering iron to the lingual surface of the fractured porcelain tooth and heat until the tooth pops out of the acrylic base material.

2

Prescription Reference

Lieut. Michael Uzelab (DC) U.S.N., Port Hueneme, California

2. Prescriptions that are commonly used in practice may be written in advance and placed in acetate covers under the appropriate headings. When the prescription is given to the patient his name and address are added.



3

Surgical Paste Applicator

E. Graykowski, D.D.S., St. Petersburg, Florida

3. Adapt one inch of plastic intravenous tubing to a one-eighth ounce tube of surgical paste. This extension allows the paste to be inserted in a socket in any place in the mouth.

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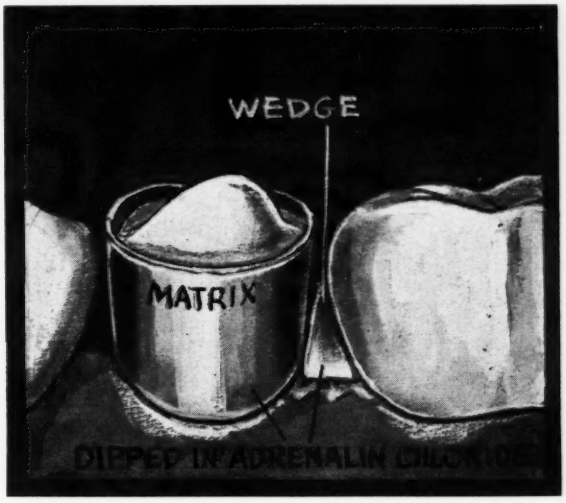
...GGESTIONS . . .

Control of Bleeding

Lawrence Wiland, D.D.S., Flushing, New York

4. When restoring a tooth with a two or more surface amalgam, the matrix band and the interproximal wedges should be dipped into a solution of adrenalin chloride (1:1000) to reduce the bleeding during the procedure.



4

Repairing a Broken Denture

James D. Pfeifer, D.D.S., Detroit, Michigan

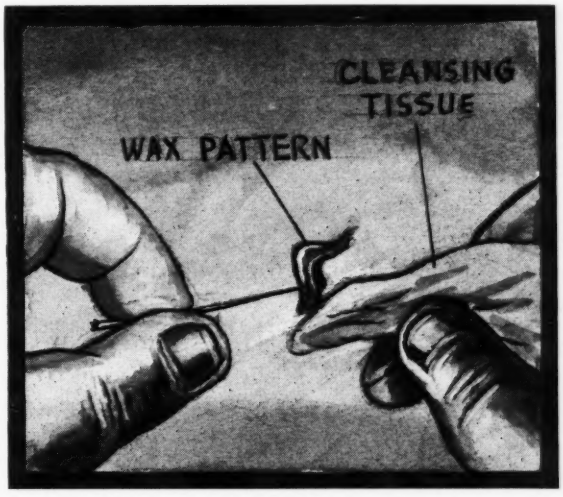
5. Insert the occlusal surface of the broken denture in a surface-warmed cake of modeling compound. The broken denture is thus held in the exact relationship while the plaster model is poured for the repair.

5

Drying a Wax Pattern

V. A. Licari, D.D.S., Foley, Minnesota

6. The use of cleansing tissue to dry an inlay pattern before investment is preferred to a brush because no pressure is required.



6

technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time. Turn to page 576 for a convenient form to use.

Send your ideas to Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

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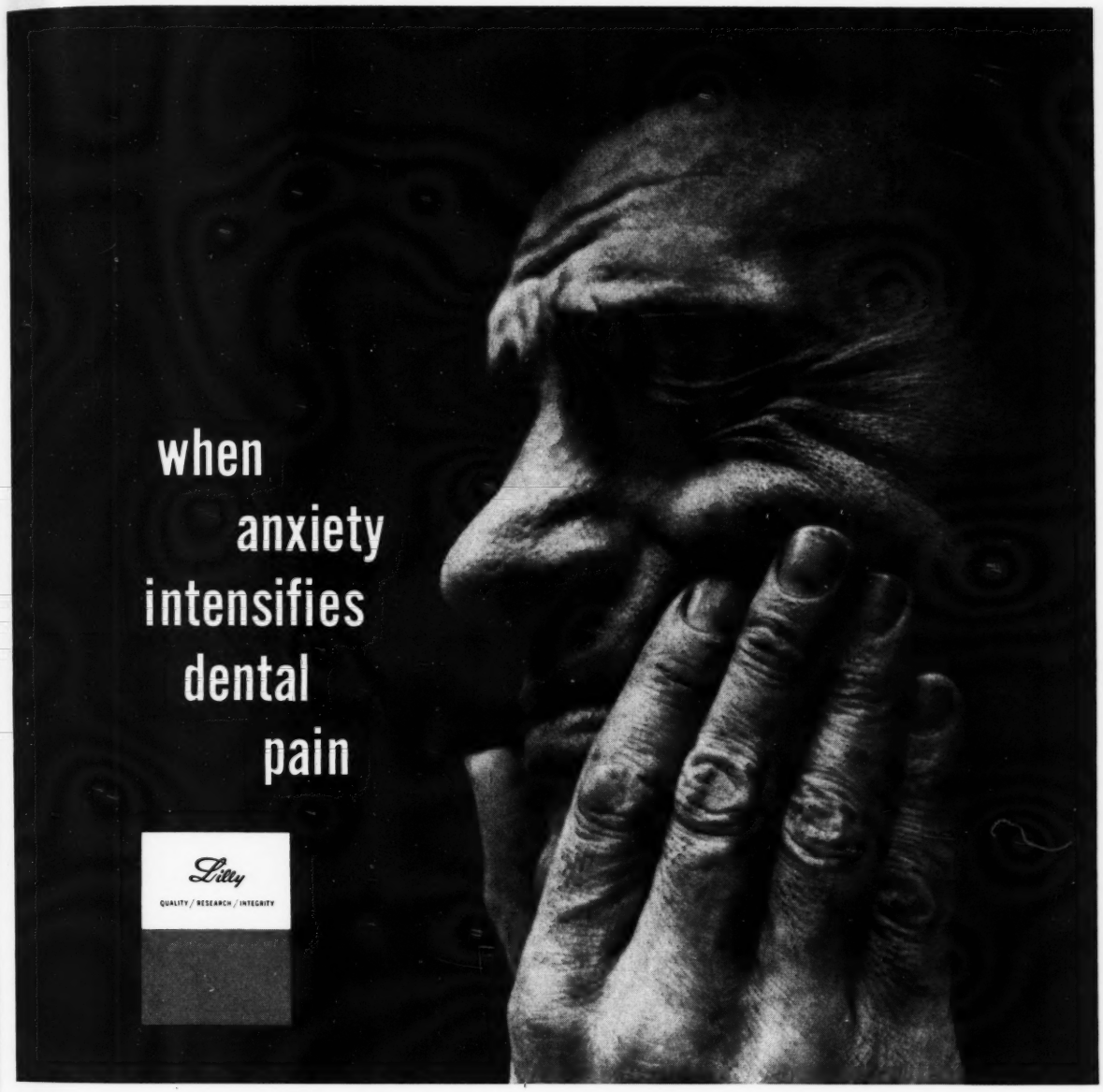
Caries

Clinical and Laboratory Suggestions

Contra-Angles

Dentures—Full and Partial

(*Continued on page* 576)



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CLINICAL AND LABORATORY SUGGESTIONS

(*See pages* 572 *and* 573)

Form to be Used by Contributors

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Subject: _____

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$10 will be paid on publication for each suggestion that is used.

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Endodontics

Exodontics

Fluoridation

Medical Subjects

(*Continued on page* 578)

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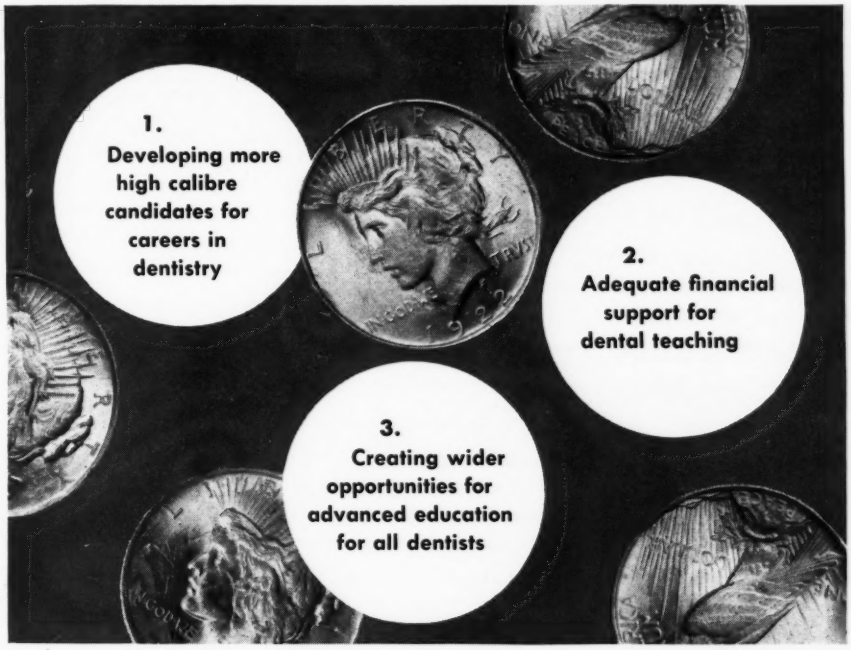

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Oral Surgery

Periodontics

(*Continued from page* 571)

short or long duration, recurrent, remitting, relapsing, intermittent, or hectic. Most people admitted to the hospital with high temperature have come because penicillin therapy failed at home. Previous antibiotics may hamper diagnosis for a day or so. With a rational approach, however, and modern techniques as many as 75 per cent of obscure fevers may be identified.

The following procedures are important in determining the cause of fever of undetermined origin:

(1) Do not start antibiotic therapy until a diagnosis has been suggested.

(2) Before treatment, search for organisms by the following methods: (a) blood cultures, (b) urine; gram stain, and culture, (c) throat; gram stain and culture, sputum smear and culture: (d) spinal fluid; gram stain and culture if symptoms of central nervous disease appear: (e) culture and gram stain of any suspicious skin or mucosal lesions including petechia and purpuric spots.

(3) Obtain febrile agglutinations and, when necessary, hetrophil antibodies.

(4) If gastrointestinal symptoms appear, make stool cultures and smears.

(5) If the patient is not seriously sick, withhold antibiotic treatment for at least forty-eight hours until culture reports are available. If the condition is toxic and therapy seems imperative, be guided by results of gram stains and the clinical syndrome.

(6) If lymph nodes are enlarged, obtain biopsy before treatment or as soon as possible.

(7) Examine and culture bone marrow.

(8) Make a lupus erythematosus cell preparation.

(9) Make a chest roentgenogram.

Lupus erythematosus may be suspected with fever, anemia, and elevated serum globulin. Patients with long-standing pyrexia, weight loss, night sweats, and enlarged liver may have military tuberculosis. Some cases are recognized by scalene node or liver biopsy and effects of therapy. Typhoid, tularemia, and Rocky Mountain spotted fever are generally identified in the first week of hospital care. Other possibilities are Boeck's sarcoid, drug fever, heat stroke, rheumatic fever and lymphocytic choriomeningitis.

Conditions at times not suspected before death include multiple pulmonary emboli, leaking aneurysm of the abdominal aorta, histiocytic medullary reticulosis, and renal or perinephric abscess.

Prolonged low fever may be associated with renal cancer, Hodgkin's disease, and brucellosis. In patients with high fever, sepsis, syphilis, or malignant tumor may predominate. Tuberculosis fever can be either high or low.

Many fevers are caused by nonspecific infections, such as respiratory, urinary, endocardial, and septicemic disease. Tumors of the stomach, colon, bronchus, and kidney, especially hypernephroma, can escape notice for long periods.

Grigsby, Margaret E.: Fever of Undetermined Origin, J. Nat. M. A. **51**:51-53 (*January*) 1959.

Nervous Patients

Many patients complain of (1) pain, (2) peculiar sensations, (3) sensory distortions, (4) dizziness, (5) weakness, and (6) fatigue, singly or in combinations. Usually the medical history is unclear and fluctuating and physical examination and laboratory tests do not reveal the cause of the symptoms.

Such patients permit, or even demand, time-consuming and expensive laboratory tests, uncomfortable examinations, long-continued use of expensive medicaments, and even surgical intervention. Frequently the doctor, against his judgment, will grant the patient's wishes and demands.

Bizarre nonorganic symptoms are caused by personal and environmental difficulties that the patient fails to recognize. The symptoms have symbolic meanings.

The patient gains some advantages by expressing interpersonal conflicts in terms of symptoms to a physician:

(1) The physically ill person is excused from responsibility, blame, and failure and is treated, at least for a time, with sympathy and kindness. The patient can avoid recognized feelings of dependency and regressive longing.

(2) The patient evades responsibility for solving personal problems. By describing difficulties in terms of the physicochemical machine the patient throws all the responsibility on the physician.

(3) Consulting a physician provides opportunity for intimate discussion. Cultural and child-rearing customs make it difficult, even in the most permissive setting, to talk about intimate personal relationships and associated feelings. Unless encouraged otherwise, the patient will translate interpersonal difficulty into organic language.

The physician-patient relationship can be a powerful help or a disruptive influence. Insofar as the physician is able to talk directly about the patient's masked and hidden feelings and make the patient aware of his inappropriateness to the present situation, he will diminish the patient's anxiety and give him an opportunity to become more nearly adult. This must be done without evidence of anxiety or anger.

Faucett, Robert L.: Symptomatic Management of the "Nervous" Patient, Minnesota Med. **41**:691-694 (*December*) 1958.

Blindness

The blind apparently have the problems of any minority group subjected to the prejudices of the majority. Society varies in its reaction to the blind. Many persons feel an attitude of overprotectiveness and tacit or explicit expectation that the blind must be dependent on charity. On the other hand, there exists a belief in the special

(*Continued on page* 582)

help change this clinical picture of inflamed gingivae*

FIRST VISIT
Patient with severe sore mouth; VINCE oxygen rinse prescribed.

1 WEEK LATER
Same patient—one week later; VINCE oxygen rinse plus prophylaxis.

5 WEEKS LATER
Same patient — five weeks later, following gingivectomy.

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1. **VINCE** *supplies safe, therapeutic oxygen to inflamed gingival tissues*
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*Typical Case History From Files of Standard Laboratories

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powers of the blind especially the supposed capacity of the blind automatically to compensate with accelerated development and superior functioning of the other senses.

Two contrasting cases demonstrate the problems of the congenitally blind. The child's blindness, by overtaxing the parents' resources and by evoking their latent conflicts, frequently precipitates their anxiety, hostility, and guilt against which they mobilize defense mechanisms and compensatory reactions. The relations of parent and child are disturbed, causing in the child overdependence, delayed, and distorted differentiation of the ego and a variety of specific symptoms. The blind child does not automatically compensate for his blindness by overdevelopment of his other senses. Such compensation is accomplished only by education of the other senses.

Congenital blindness does not always cause personality disorder, but blindness occurring when ego functions are already developed disrupts established patterns of communication, motility, work, recreation, and feeling about one's self. The reaction of the healthy personality to sudden blindness has two stages: (1) immediate shock, and (2) recovery. The shock consists of depersonalization followed by depression. Awareness that this depression is a mourning reaction rather than a psychiatric disease requiring treatment is essential if we are to avoid such blunders as shock therapy or attempts to force the patient to turn his psychic energies to the external world before he has accomplished the inner work of mourning.

By sudden blindness is meant not only the blindness associated with combat and accidents but also the blindness resulting from a protracted ocular disease for which the patient has not been prepared. The permanent reactions to blindness include almost every kind of psychopathology. The depressive phase of shock may turn into a chronic state of masochistic depression, with selfrecrimination and bitterness. These people remain dependent and resentful. Character disorders often are an aggravation of preexisting traits. Many adjusted and productive blind people identify themselves with other blind in a defensive self-protective minority against the hostile, inconsiderate, and stupid world of those who see.

Blank, H. R.: Psychoanalysis and Blindness, Psychoanalyt. Quart. **26**:1-24 (*January*) 1957.

Congestive Heart Failure

Congestive heart failure is commonly associated with retention of fluid. Not only is the quantity of the retention important but also the site of the accumulation. A small amount of fluid accumulating in the lungs may demand more attention than a large amount in a leg. A clinically obscure intracellular overhydration may be of greater importance than an obvious ascites.

The retention of water and sodium predominantly results from a disturbance of renal function as it is influenced by diminished renal blood flow, increased renal venous pressure, reflex nerve stimuli, and altered endocrine secretions. Retention is also increased by the hydrostatic and membrane permeability effects of increased venous pressure, anoxia, lymphatic obstructions, and hypoproteinemia.

Some of the fluid retention is usually intravascular, although the magnitude of hypervolemia is considerably less than might be expected from observation of the distended veins. Most of the fluid accumulated is in the interstitial tissue or in the body cavities. Alterations of intracellular fluid and electrolyte content are variable, difficult to measure, and uncertain in mechanism.

Usually the patient with congestive heart failure has obvious intrinsic heart disease that may reasonably be held responsible for the failure. Conditions which aggravate and perpetuate congestive heart failure are thyrotoxicosis, infection, especially subacute bacterial endocarditis, active rheumatic fever, thromboembolism, prostatism, and anemia. The clinical

manifestations of any of these may be obscured by those of the intrinsic heart disease. Recognition and appropriate therapy, however, may contribute outstanding success to the relief of the failure.

Congestive heart failure is best treated before it occurs. Preventive measures are essentially the same as treatment measures, applied with less vigor. It is often difficult to persuade the asymptomatic patient to cooperate. In an acute problem such as myocardial infarction it is wiser to restrict salt from the beginning and to apply further appropriate measures at the first sign of fluid accumulation rather than to withhold treatment until the fulminant manifestations of failure have appeared.

In chronic problems there is good reason to believe that failure begets failure; after failure, the heart may never regain the same functional capacity. It may be that a patient with progressive cardiac enlargement deserves digitalis therapy, but whether digitalis is used or not, therapy should begin at the earliest sign of failure, if not before.

Kay, Calvin F.: Current Status of Therapy for Congestive Heart Failure, JAMA **164**:659-667 (*June* 8) 1957.

Contra-Angles

Exercise for the Snorer

IF YOU suffer from nocturnal hyperactivity of the soft palate with an increase in the inspiratory audible tones you may be a candidate for a set of experiments designed by a British physician (I. Harvey Flack). In short, if you snore and disturb the peace in your home or neighborhood you may help yourself—and your family and neighbors—by a series of muscle exercises before you go to bed.

Snoring is an antisocial, but unconscious habit. The most dignified man of affairs may have this secret habit, known not to himself. A matron of gracious charm, even a D.A.R., may snore in uneven spurts or emit sounds with real rhythm.

I had an uncle, of quiet manner and distinguished appearance, who was a nocturnal "window rattler" in the early hours of his sleep pattern. After an hour or two of snorting performance fatigue overcame his palatal muscles and he slept in quiet peace. His wife, a dear but domineering woman, sent him to bed an hour before her bedtime to be assured that he had passed the zenith of his achievement. During the hour or so of inspiratory-soft palate vibration, a period of real torture, a guest in any part of the house would know that my uncle was *sound* asleep.

I doubt if the genetic plan of my family carries any particular chromosones that convey overdeveloped palatal muscles with violent inspiratory effect. It may be more than a coincidence, however, that an aunt of mine, a frail and dainty woman of about 100 pounds, was an explosive, non-rhythmic snorer. Even when she napped in her chair at midday ("to rest my eyes," as she explained) she could be counted on to snort in non-predictable intervals. At times one of these outbursts would startle her to full wakefulness.

These two meager case histories do not prove that snoring is a genetic weakness. I have been told, though, that another and more recent generation has shown signs and sounds of the same constitutional syndrome. I deny it with vigor.

(*Continued on page* 584)

A friend of ours insists that her husband disturbs the peace by the clonic contractions of his palatal musculature with wild noises when he has exceeded his Scotch quota for the evening. She has also observed that snoring is aggravated when her husband sleeps on his back. This fact is well documented because I have heard of ingenious wives who attach a tennis ball on the back of their husband's sleeping garment. This is to stimulate some kind of Pavlovian reflex that will prompt the husband to roll into a different sleeping posture.

Although I am rather hazy on Greek mythology I recall that Stentor was a kind of herald or announcer in the Trojan war. He had a voice that was as strong as 50 men bellowing in unison. This minor character of the Iliad has given his name to medical literature. The heavy breathing that is often heard in deep coma is stentorian. In the cause of classic scholarship we may appropriate the name for the more objectionable snorer: *Stentor nocturnus*. We may say that he (and often she) suffers from SN. If we wish we may classify into grades or subtypes: I, II, III, according to the frequency and volume of the particular performance. A sound engineer should certainly be a member of the SN research team.

The British physician who conducted his experiment and reported in *Family Doctor*, a publication of the British Medical Association, laments that of the 250 original volunteers for the snoring experiment only 78 were considered to be worthy subjects. The ignoble 172 were disqualified because they were only occasional performers or for the reason that they slept alone and were thus denied an audience recorder.

Because the snoring experiment is clearly within the physiologic and anatomic zone known best to dentists it is necessary for the sake of scientific objectivity to record the premise for the experiment as reported so well in the Medical Tribune:

"The exercises depend on the principle that a muscle shortens when fatigued. Thus, it might be possible by exercise to exploit the shortening effect to hold the jaw and tongue in a position in which snoring is less likely. There are three exercises prescribed. To tighten the muscles that hold the mouth closed, the volunteer was asked to hold something firmly between his teeth for 10 minutes—a wooden spatula was sent to each subject. Next, the snorer had to press the fingers against the lower jaw, simultaneously pushing the jaw forward against the fingers; then to press the tongue against the lower teeth for three or four minutes. Finally, snorers had to hold up the soft palate for three or four minutes, in order to tighten the throat muscles.

"The conclusions, just published, show that about half the 78 volunteers reported some improvement. Thirty-one of them said they had gained no benefit, and six were doubtful."

I dislike the role of carping critic of this earnest experiment but in the good cause of science I must record my reactions:

Tightening of the muscle groups that hold the mouth closed is a simple maneuver. What may happen to the occlusion when the teeth are clenched and the free-way space is obliterated is cause for further experiment. Perhaps the gift of wooden spatulas negates the objection.

A second phase (tongue thrusting) is frowned upon by dentists. If this habit pattern is encouraged it is quite possible it may be extended beyond the prescribed three or four minutes. If so, the dental alinement may suffer permanent damage.

The third stage, in this biologic form of rocketry, seems difficult. Every dentist knows that "to hold up the soft palate for three or four minutes" is quite impossible. All dental clinicians when they take impressions or make x-ray exposures in the posterior mouth hope for this palatal elevator skill to be demonstrated by their patients. Most of the people that I have treated in 30 years of practice seem to suffer from droopy, hypersensitive soft palates that are quick to defend and guard their pharyngeal spaces. In fact, despite the nobleness of the snore experiment I prefer patients who have the quick reflex to lower

(*Continued on page* 588)

their soft palate when danger threatens. It saves dentists from the dismay of swallowed or aspirated dental devices and instruments.

There is nothing in dental practice, except cessation of breathing, that is as disconcerting to see as an inlay in the process of fitting or a broken instrument, pass behind the protective curtain of this soft palate on its way to the esophagus and parts beyond. The hours that are required for the object to make leisurely passage through the gastrointestinal tract are hours of real concern to the patient and the dentist. Despite the indelicacy of the return it is a welcomed event.

My chief critique to the nightly ritual of inducing muscle fatigue in the orofacial organs to prevent snoring is a practical one: people will not perform such bedtime exercises. It is hard enough for most of them to take the time to brush their teeth!

—E. J. R.

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